Medical Library

The ILLINOIS Medical Journal

VOL. 86 NO. 3

Medical Library

September, 1944

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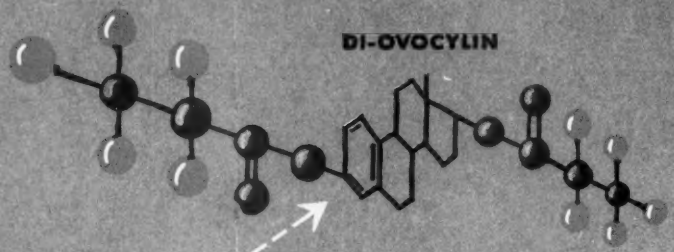
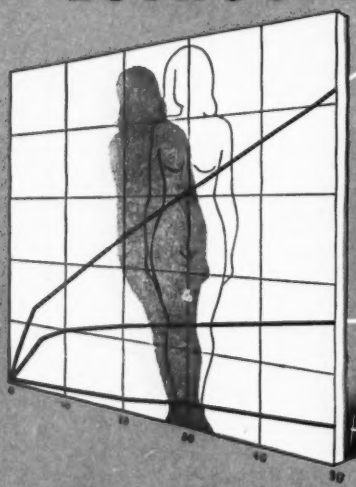
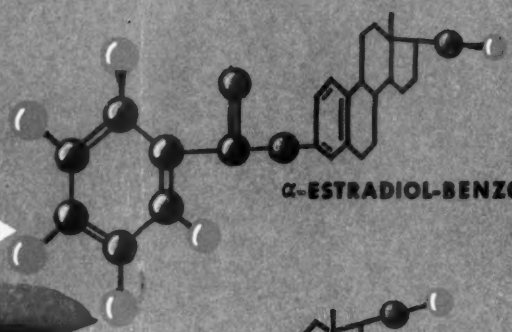
OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY

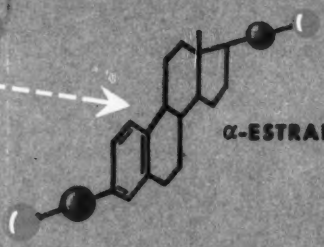
OCT 3 1944



INTENSE ESTROGENIC EFFECTS







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The Illinois Medical Journal

September, 1944

VOL. 86, NO. 3

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Harry Culver, Walter Stevenson, Raymond W. McNealy.

Editorials

DON'T FORGET THE BOYS IN SERVICE

During recent weeks we have received many letters from members of the Illinois State Medical Society who are with the armed forces on the many and ever-increasing battle fronts. Usually they wonder why they do not receive their Journal regularly, as they may receive a copy or two then no additional copies for a number of months. One fine young physician in the South Pacific wrote that he had received a copy of the Journal, read everything including the ads, then passed it around among the other medical officers who also were interested in the copy at hand. It had been the first medical journal any of these men had seen in many weeks, and it was appreciated greatly.

The Journals are sent to overseas members each month, and it is through no fault of the editor and his assistants when copies are not received regularly. It is a big task to get all mail to the millions of men in service, and naturally first class mail should arrive before magazines and other publications sent on a lower postal rate.

It is the practice of many physicians to write regularly to their absent confreres. Even though there are fewer physicians remaining at home to give civilian care, the average physician can still find time which can be utilized in writing to his personal friends participating in the unusual medical and surgical care program of the Services.

With the many changes of address due to service problems, any such change should be sent promptly to the State Medical Society and to the Editor of the Journal so that there will be no unnecessary delay in writing or in sending medical journals and other material to physicians in service.

Everyone today is proud of the health record maintained in the Army and Navy. Much credit should be given to those responsible for arranging the present program, and likewise to the thousands of physicians actually rendering the services. Those of us at home have the opportunity of attending medical meetings, reading many journals and new books which are available; but unfortunately the busy members of our profession on active duty work long hours, have little time for recreation and study, and do not have the facilities available when the time could be so utilized. They will appreciate hearing from home to learn of the problems of their former colleagues, and to get our "every day news."

MILITARY MEDICAL HISTORY OF ILLINOIS

Some years ago the Illinois State Medical Society endeavored to prepare and publish "The History of Medicine in Illinois," which it was thought, could be made complete in one volume. After working diligently for more than two years

it was learned that enough material had been accumulated to fill three or four volumes. It was the intention of the Society to issue one volume as soon as it could be completed, then later edit and publish a second volume to bring the historical data up to date. Owing to many unavoidable conditions the second volume has never been published.

There is an unusual opportunity available now to collect historical data concerning the work of the physicians in service. When this material has been assembled, it can be published in such a way that it can be added to the permanent records of the Society for the benefit of future generations. We are informed that medical histories were published of the achievements following both the Civil War and the first World War under the supervision of the Office of the Surgeon General. Plans have been under way for approximately three years to collect and preserve for publication the many medical achievements of the present war with the responsibility placed in the Offices of the Surgeons General.

Many physicians in Illinois are receiving letters regularly from friends and colleagues in the medical services. Much valuable material for an Illinois Medical History of the War which could no doubt be incorporated in the second volume of the History of Medicine in Illinois can be amassed in this way. The many achievements of medical science and their actual use in the field and base hospitals will make an interesting story for many years to come. When Illinois physicians are involved in these many fields, along with citations for unusual bravery under fire, emergency applications of therapy with the minimal requirements available in the field, dugouts, etc., will make it indeed a most memorable record for future generations in medicine.

The Illinois State Medical Society has a permanent Committee on Archives which will endeavor in every way to get information concerning Illinois physicians in service, their work, etc. Every county medical society within the state should aid in procuring such information from members now in service, or from those who have been given their medical discharge.

Illinois physicians in service on the many fronts will no doubt see this editorial and perhaps will voluntarily send to the Editor or

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others desirous of aiding in the procurement of historical data on this type, material so that it may be properly recorded and kept safely until a sufficient amount is available to justify its publication.

Many stories quite obviously will remain untold until the end of the war, but there are many interesting incidents pertaining to the medical and surgical work of Illinois physicians which can be told while they are fresh in the memory of the military physicians.

The Illinois State Medical Society endeavors each month to send to each member in service a copy of the Illinois Medical Journal. Even though copies may be several months late it is through no fault of the Journal staff. Many times failure to receive the Journal is due to the failure of the physician to report his latest post office address. We therefore would urge our overseas members to keep us informed of their addresses, and whenever a physician is transferred, to let us know at once of the change.

THE EVALUATION OF PENICILLIN AS A THERAPEUTIC AGENT

A short time ago an announcement was made that there would be a limited amount of penicillin stored in many hospitals throughout the country so that it would be available for civilian use in cases where there seemed to be a reasonable belief that it was indicated in the treatment of definite diseases. Under the plan penicillin could be procured and would be charged to the hospital where the treatment was to be given, and the cost greatly reduced so that it is possible to use it in families in moderate circumstances.

During the past month Sir Howard Walter Florey, professor of pathology at Oxford University, has been making a short visit in the United States. He was the first to prove that penicillin could save human life. In a nationwide broadcast he told the story of penicillin and its use to save lives on the battlefield and in base hospitals on the war fronts. He was particularly impressed with the work done in this country in overcoming the problems of large scale production of the drug, thus making it possible not only to produce the desired quantity for the armed forces, but also to have a fairly liberal supply for civilian use.

Many articles have been written and published in lay publications which have in some instances given an erroneous impression of its value so that many believe that it is the long sought panacea which will cure all disease. During the early stages of its development in the United States many physicians were unable to make their own determinations through actual experience of the value of penicillin in many conditions. No doubt now that a greater supply is available, it will be tried in many diseases for which there is no definite indication for its use. Many will quite obviously be disappointed when relief is not obtained, yet its clinical worth has been proven so many times that it can now be considered as one of the greatest additions to the armamentarium of the medical profession in many years.

Penicillin has been used in all branches of medicine and many interesting reports are to be found in every type of medical journal that comes off the press. Penicillin can be used locally, in solution, or in an ointment base, intravenously either by the continuous drip or by repeated intravenous injections, intramuscularly, intrathecally, and it can be used in powder form with sulfanilimide, and perhaps with other drugs. Recent literature has reported its use intramuscularly as a transfusion, similar to the continuous intravenous drip, and with good results in selected cases.

In bone infections some of the most spectacular results through the use of penicillin have been reported. However it can in no way replace indicated surgery, although proper surgical treatment followed by the administration of penicillin has resulted in excellent recoveries where without its use, the prognosis would seem almost hopeless. Experimental work done recently by Heilman and Herrell suggests that penicillin may be of real value in at least two virus infection in man, psittacosis and ornithosis. Herrell states that "penicillin therapy should be confined to pathogens known to be susceptible to its action."

With a greater amount of this valuable therapeutic agency available for general clinical use, it is most likely that its true value in the treatment of disease will soon be determined, and in the meantime it seems quite logical to state that it should be used in those types of conditions in which its value has already been established definitely.

Correspondence

AMERICAN COLLEGE OF SURGEONS CANCELS 1944 CLINICAL CONGRESS

The American College of Surgeons, upon action of its Board of Regents, has cancelled its Annual Clinical Congress because of the acute war situation that has developed, involving greater demands than at any time in the past upon our transportation systems for the carrying of wounded military personnel, troops, and war materiel. The Congress was to have been held in Chicago, October 24 to 27.

Dr. Irvin Abell of Louisville, Chairman of the Board of Regents, in making the announcement, said that this action was taken after consultation with officials in Washington.

WOMAN'S AUXILIARY

The President's Message 1944-1945

Greetings are extended by your President to all members throughout the state. Again a new Auxiliary year lies ahead with its work and its problems. The success of this year depends not on any one individual alone, but on all working together as a whole. Therefore, it is up to every member to see that the aims and purposes of the Auxiliary are carried out. Keeping this in mind, the accomplishments of "OUR YEAR" will be a reward enjoyed by each one contributing her efforts toward these ends.

An innovation this year is the School of Instruction. Much time and work has been put into this by women who have had years of experience in Auxiliary work. A need for such a school as this has been felt for some time. A greater understanding of the objects and mechanics of the Auxiliary is necessary in order that a more decided progress can be made. All members, and especially officers and chairmen, are urged to attend a School of Instruction. Tentative plans are to have a School of Instruction made available to all at some time during the year. Notifications will be sent out as these plans materialize.

Again all Auxiliary members are asked to keep a close watch on legislative matters. Although the Wagner-Murray-Dingell bill has been more or less dormant, it could be brought up at any time. Also we must continue to be on the alert for the osteopathic and chiropractic legislations which are always attempting to gain foot hold.

The task of increasing the Benevolence fund is for the second time especially asked of the Auxiliary by the Medical Society. It is expected that the immediate years ahead will greatly increase the need for Benevolence. The Auxiliary can show a sincere spirit of cooperation by aiding in this work which is requested of us by our doctors.

Please remember that your President is here to serve you, and is ready at all times to give any help possible.

— Estella West Gareiss

WOMAN'S AUXILIARY DISTRICT MEETING, PEORIA, ILINOIS

The Woman's Auxiliary to the Peoria Medical Society is sponsoring a School of Instruction for all county officers and chairmen to be held at the Pere Marquette Hotel in Peoria, Illinois on

September 27, 1944. (Same time and place as the Mississippi Valley Conference)

Duties of all county officers and chairmen will be presented and discussed.

All physician's wives are invited. Those who are not members of the Auxiliary are cordially invited so as to become acquainted with the history and aims of the organization.

Registration — 9:30 A. M.
Open Session — 10:00 A. M.
Luncheon — 1:00 P. M.

Program following.

Our state President, Mrs. Alfred Gareiss of Chicago, Illinois, will be our guest of honor.

AMERICAN ACADEMY OF PEDIATRICS WITHDRAWS SUPPORT FROM CHILDREN'S BUREAU

Further evidence of opposition to a trend toward socialized medicine was noted here in the action of the American Academy of Pediatrics in withdrawing its support from the Children's Bureau because its system of emergency maternity and infant care is an entering wedge for socialized medicine.

Last month a conference of child specialists and social workers here took a stand against the bureau's group care of children, asserting that group care was damaging to child welfare and actually more expensive than a foster family system of care which the conferees advocated. The academy announced its position in the *Journal of Pediatrics* as follows: "We feel the time has come when the academy and the pediatricians of the United States must withdraw their support from the Children's Bureau and use their influence as a group and as individuals to place all health activities under the Public Health Service."

Records of the Children's Bureau show that since the beginning of the program in March 1943 through May 1, 355,000 mothers and babies of servicemen received federal aid under the program for which Congress appropriated $42.800,000. Entitled to care under the program are wives and infants of men in the four lowest paid grades of the armed forces.

The academy withdrew its support despite insistence of Dr. Martha M. Eliot, assistant chief and chief medical adviser of the bureau, that "EMIC will disappear when the war is over."

The pediatricians, in throwing their support from the Children's Bureau to the Public Health Service, are transferring it from an agency dominated by social workers to the medical authorities wielding balance of power at Public Health Service.

Dr. Eliot says in defense of the program that Congress brought it into existence as a wartime measure. She denied that the Children's Bureau intended to enter the practice of medicine after the war or to continue the emergency medical and infant care program in some other guise.

Pediatricians argue that the wartime program had made the Children's Bureau an active factor in the practice of medicine in this country "dictatorially regulating fees and conditions of practice on a federal basis." It quoted articles issued by the bureau as indicating that it is evident that "a free to all service, with full time salaried physicians, paid for directly from general taxes and controlled and directed by a federal bureau," is planned. The average EMIC payment is reported to be about $84 a case.

J. A. M. A. Aug. 12, '44.

The mortality curve in females reaches its high point (except for very elderly females) much earlier than it does in males. The curve for the latter rises evenly with age; the curve for the former climbs abruptly and tends to remain horizontal. Knowledge which throws some light on this sex differential have come from general physiology and pathology and it is a matter which deserves continuing study. But one need not wait upon an explanation to appreciate that young women offer a higher tuberculosis risk than young men; nor need one wait upon additional knowledge when it is evident that the manual worker in general has a higher tuberculosis mortality rate than has the white collar group. The facts to face are that war's necessities are pushing one high rate group into the working and living conditions of another high rate group; and unless every precaution is taken, the factors which contribute to the high rates in these respective groups may act and react upon each other to the jeopardy of the human beings concerned. Obviously, the situation has within it all the elements of an epidemic (or high endemic) potential. Ed., Am. Jour. Pub. Health, July, 1943.

Tuberculous individuals can live their normal span of life or even exceed the recognized life expectancy. Arthur Rest, M.D., Amer. Rev. of Tuber., Mar., 1942.

Medicine's Role in the War Effort

INDUSTRIAL MEDICAL PROGRAM OF THE ARMY

The Army is very likely the largest single employer in the country today. Not only does it operate its own arsenals, depots and industrial plants, but also the Surgeon General's Office is responsible for sanitation, hygiene and medical supervision over army owned contract operated installations which are located on military reservations. The chain of responsibility extends through the Surgeon General, who establishes policy and maintains advisory supervision into the service commands the army air forces, to the ports of embarkation under the control of the chief of transportation, and to the chief of ordnance.

In the Surgeon General's Office the Occupational Health Division functions in the Preventive Medicine Service. It establishes policy, gives technical advice, supervises the Army Industrial Hygiene Laboratory and maintains liaison with other governmental agencies concerned with industrial health and safety. The Army Industrial Hygiene Laboratory, located in the School of Public Health at Johns Hopkins University in Baltimore, surveys army industrial installations as to environmental hygiene and provides medical and engineering consultation to control occupational health hazards.

The plan of organization in each service command includes the appointment of a qualified industrial medical officer and a qualified sanitary corps officer as the industrial hygiene engineer, acting under the direction of the service command surgeon. These officers make inspections, recommend the installation of new or additional medical facilities, participate in industrial hygiene surveys and cooperate with other personnel in the service command in the control of absenteeism and the prevention of industrial accidents. Requests for assistance from the Office of the Surgeon General are transmitted by the commanding general of the service command.

The commanding general of the Army Air Forces makes use of the central agency set up in the Surgeon General's Office. He also is empowered to provide personnel for developing industrial medical services in army service forces commands and designates qualified medical officers and sanitary officers to conduct adequate industrial health programs. The chief of transportation acts in an identical capacity at the ports of embarkation.

In the installations themselves medical responsibility may reside in a medical officer, a contract surgeon or civilian physician as circumstances suggest. In any case the duties include physical examination (preplacement and periodic), emergency care, immunization, control of occupational health hazards, maintenance of proper reports and records, industrial hygiene consultation services, health programs, cooperation with safety programs and the necessary measures for a healthful work environment. In all of these services the responsible officer is assisted by the industrial hygiene engineer.

Special regulations apply to personnel. Civilian physicians qualify for assignment through civil service, or contract surgeons are employed to conduct the medical services at all army operated industrial plants. Such employment customarily follows after authorization by a service command and after clearance with the Procurement and Assignment Services. Funds are allotted by the service command. Registered graduate nurses not eligible for service in the Army Nurse Corps are generally employed in army operated plants. This rule can be modified only by special action of the commanding generals of the army service forces or army air forces. Supplies and equipment are available from the Surgeon General or appropriate medical department distribution depot.

★ ★

AIR EVACUATION AIDS WOUNDED IN BURMA

Col. Don Flickinger, wing surgeon of the AAF Air Transport Command, India-China Wing, who recently returned to the United States for reassignment, told of the increasing number of sick and wounded being evacuated by air transport in the

China-Burma-India theater of operations and disclosed that among them were hundreds of Chinese soldiers wounded in action against the Japanese in Burma. Hundreds of other casualties of the Allied ground forces fighting in Burma also are being evacuated by air, the total number of patients in March being 1,106 and in April 1,342. Six regular air evacuation "runs," one of them over the Hump, are made by the Air Transport Wing each week, the patients on each being cared for by flight surgeons and flight nurses.

Air evacuation medical personnel are facing the same hazards that the ATC pilots do on such runs. In one instance a flight nurse, a flight surgeon and an enlisted surgical technician were wounded when a Japanese bomber bombed and strafed their field just as they were taking off in a transport plane. Colonel Flickinger stated that the general health of the flying personnel making the dangerous trip over the Hump, taking in supplies to China, was good. Many factors, such as better sanitation, food, living conditions, emergency rescue, training and rotation of air crews back to the United States, have greatly improved the physical and mental status of the personnel. Colonel Flickinger said that the three principal reasons for the good standard of health maintained in the wing were the basic toughness of the American soldier, the vigilance of medical officers and the support and backing of the commanding general in all recommendations by the flight surgeon.

In August 1943 Colonel Flickinger parachuted with medical supplies to the aid of 20 survivors of a four engine transport plane which crashed in a wild region of Burma. The survivors included two U. S. government officials, a radio news commentator and Chinese army officers. Colonel Flickinger was awarded the Legion of Merit in 1942 for his experiments with devices to aid in sighting pilots forced down at sea. He also holds the Distinguished Flying Cross, Soldier's Medal, Air Medal and a Presidential unit citation.

★ ★

DOCTORS USE OWN BLOOD TO SAVE WOUNDED SOLDIER

Two British army doctors each took a pint of blood from the other to save a seriously wounded soldier after the Germans had bombed a dressing station on the Normandy beach. The two physicians, Capt. D. A. Squire of Bristol and Capt. Hugh Conway of Beith, Scotland, had already sent for a fresh supply for their dwindling stock of plasma. Before it reached them, however, a bomb demolished the evacuation tent, killing some stretcher bearers and critically wounding others. There was no time to wait for the plasma, so the two doctors gave their own blood to one of the most badly wounded, thus saving his life.

RAPID, SIMPLIFIED METHODS FOR TREATING GONORRHEA WITH PENICILLIN

Physicians of the U. S. Public Health Service, Federal Security Agency, recently reported on the rapid, simplified methods for treating gonorrhea with penicillin, which require no hospital care for the patients and which can be used conveniently by physicians in private practice or by clinics. One schedule of five treatments can be completed in only seven and one-half hours; another requires additional treatment the morning o fthe second day. The use of either of these methods, or modifications of them, may make possible wider application of penicillin treatment to the problem of gonorrhea control in the national program to combat venereal diseases where time and circumstances do not permit the use of standard twelve to twenty-one hour treatment schedules. The new methods have been effective in almost as large a percentage of cases as the standard schedules.

The "outpatient" schedules of treatment were developed by Dr. C. J. Van Slyke of the Public Health Service Venereal Disease Research Laboratory, Staten Island, and Dr. S. Stienberg of the U. S. Marine Hospital, New York. The race of the patients, the length of time they had the disease and previous treatment with sulfonamide drugs apparently had no effect on the results of penicillin treatment. Many of the patients volunteered the information that a definite sense of well-being followed the injections of penicillin.

★ ★

UTILIZATION OF RECOVERED PSYCHONEUROTIC PATIENTS

Recovered psychoneurotic patients are given retraining by the Army so that they may be utilized for further service. Classification boards carefully review each man's record and indicate the degree and kind of service he is capable of performing. The Classification Board will be constituted only for the purpose of removing classification of restriction as regards mental state for the purpose of declaring an enlisted man to be qualified for full general duty. Assignments are governed largely by the geographic location in which the men desire to be stationed, and it is the responsibility of each installation to utilize the men in best possible manner considering their limitations as shown on W.D., A.G.O. form 20 and Disposition Board report included in records.

★ ★

FOURTEEN SOLDIERS WHO VOLUNTARILY CONTRACTED SANDFLY FEVER FOR RESEARCH AWARDED MEDALS

The Legion of Merit was recently awarded to fourteen soldiers who volunteered to submit to experiments which greatly increased the knowledge of sandfly fever, a disease encountered by American fighting men in tropical and semitropical regions. The soldiers were all infected with the disease during the experiments. The fever was produced in

some of the volunteers by small injections of blood from individuals who had it and in others by deliberate exposure to repeated bites of infected sandflies. The carrier is a fly about an eighth of an inch long, and it is only the female of the species which bites. The experiments disclosed that the virus causing the fever in the Middle East was the same as that contracted by our soldiers in Sicily.

★ ★

BLIND YANKS TREATED AT ST. DUNSTAN'S

The first American casualty from Normandy was recently admitted at St. Dunstan's, famous British hospital and training center for the war blinded. Under the system of mutual aid, by which not only equipment but the brains and experience of Britain and America are pooled, it was agreed by the American and British governments that this unique eye hospital would receive American casualties from the European theater and treat and train them exactly as are British soldiers and airmen. The United States could similarily take care of British eye casualties from the Pacific area. Seven Americans have been admitted to St. Dunstan's to date. Some have now returned to America to continue treatment and training. Others have so taken to St. Dunstan's training and personnel that they have asked to stay in England until thoroughly rehabilitated and have been allowed to do so.

The most recent achievements in coordination between British and American services for the blind include the production of "talking books." These full length recorded novels, biographies and many other types are so made that the blind can confidentally handle and play them. Like ordinary phonograph records except for the fact that they are very slow running, they must be played on a specially constructed machine. Thus technical coordination is essential in order for Britain and the United States to exchange recordings.

Britain has just begun making talking books for the Library of Congress and other distribution in America, and several copies of "Whereas I Was Blind," by Sir Ian Fraser, the personal story of the founder of St. Dunstan's, are now en route. St. Dunstan's finds that the blind especially like novels which have made popular plays and films, and American recordings of Daphne Du Maurier's "Rebecca" and Margaret Mitchell's "Gone With the Wind," on eight records, have recently arrived here. Richard Llewellyn's "How Green Was My Valley" is a popular British recording.

★ ★

POSTWAR TRAINING OF MEDICAL CORPS OFFICERS

The Office of the Surgeon General of the Army has announced the appointment of a committee to formulate plans for postwar training of medical corps officers who will be separated from the military service at the end of the war. The committee consists of Brig. Gen. Raymond W. Bliss, chief of operations service, chairman; Brig. Gen. James S. Simmons, chief of preventive medicine service; Col. James R. Hudnall, chief of personnel service; Brig. Gen. Fred W. Rankin, director of surgery division; Brig. Gen. Hugh J. Morgan, director of medicine division; Col. Floyd L. Wergeland, director of training division; Col. William P. Holbrook and Lieut. Col. R. H. Meiling, representatives from the Army Air Forces; Col. R. B. Skinner, representative from the Army Ground Forces; George B. Darling, M. D., representative from the National Research Council.

★ ★

ARMY NURSE CORPS ACQUIRES FULL MILITARY STATUS

Approximately 40,000 Army nurses have become officers of the Army of the United States, acquiring full military status for the first time since the Army Nurse Corps was founded in 1901 by an act of Congress. By the terms of an executive order signed by President Roosevelt, the entire personnel of the Army Nurse Corps has been moved bodily into the Army, with the same pay and prerogatives as other officers. Prior to passage of the bill signed by the President, June 22, and made fully effective July 12, Army nurses held what was known in the Army as "relative rank," giving them subordinate status and limited military authority. Army nurses now have the same status as members of the WAC, who were also an army auxiliary when first organized. Commissions in their present grades will be issued to all members of the Army Nurse Corps under the provisions of the new executive order unless they expressly decline appointment. Female dietitians and physical therapy aides will have the same military status as nurses and will be commissioned similarly.

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PROCEDURES GIVEN FOR A.S.T.P. MEDICAL, DENTAL PROGRAMS

Procedures for disposal of certain enlisted personnel in the Army Specialized Training Medical Program necessitated by provisions of the Military Appropriations Act, 1945, have been announced by the War Department. The act, approved June 28, 1944, stipulated that none of the funds appropriated shall be used for training medical and premedical students unless they were in training prior to June 7, 1944, and such training was defrayed from 1944 appropriations.

At the same time, it was announced that the A. S. T. P. dental training program is being terminated at the close of the present semester except for those in the senior, or final year, who will be permitted to complete the course and on graduation will be commissioned. This action is taken because the Army's requirements for dentists are now filled.

Those individuals now on active duty whose medical or pre-medical educational expenses were defrayed in whole or in part by the government under

the A.S.T.P. program prior to June 7, 1944 will be continued in the medical program of the A.S.T.P. Those on active duty whose medical or pre-medical training was not defrayed either in whole or in part under the A.S.T.P. program prior to June 7, 1944 and who for that reason cannot be continued in the training program fall into two classes who will be disposed of as follows:

1. Those who have letters of acceptance and who would have entered an accredited medical school by Dec. 31, 1944. An individual in this group may elect to be discharged from the Army shortly before the entrance date of the class for which he was accepted; or to be assigned to the Medical Department with no further A.S.T.P. medical training.

2. Those who do not have a letter of acceptance to an accredited medical school, for entrance by Dec. 31, 1944. These men will be continued on active duty and will not be eligible for A.S.T.P. medical training.

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HOSPITALIZATION OF DEPENDENTS OF NAVY PERSONNEL

Instructions have been issued by the Navy Department to govern the hospitalization of dependents of naval personnel in accordance with the act of May 10, 1943, which provided for expansion of facilities for hospitalization of dependents of naval and Marine Corps Personnel. The instructions, dated June 10 but just published, define dependents as wife, unmarried dependent children under 21 years of age and mother and father if in fact dependent. Widows of deceased naval and marine personnel also are entitled to hospital care in the same manner as dependents. The Navy Department has authority to designate naval hospitals to which dependents shall be admitted and may remove such designation or add to the list of designated hospitals at any time. The commanding officer of the designated hospital shall determine the availability of accommodations for dependents and their need for hospitalization, reserving sufficient facilities for present and prospective naval personnel patient loads. Dependents shall be admitted only for acute medical and surgical conditions, exclusive of nervous, mental or contagious care. Dental treatment shall be administered only as an adjunct to impatient hospital care and shall not include dental prosthesis or orthodontia. For each patient admitted and for each day in the hospital, the member of the Navy or Marine Corps concerned shall pay $7.75. While the Coast Guard is operating as part of the Navy, dependents of Coast Guard personnel are entitled to hospitalization on the same basis as members of the other sea services.

STUNG BY VITAMIN BEE?

Don't look now, but you are in the midst of the greatest vitamin boom of all time. There was a period when we considered a vitamin as a small atomic organic substance found only in minute amounts in food; now what have we?

Vitamins can be bought by the barrel and are in every drug and department store and in some grocery stores. Vitamins are being added to various foods to make them more attractive and nutritious.

It is even rumored that vitamin B will soon be added to gasoline if they can find some reason for it. The height of chicanery was reached a short time ago when a local drugstore opened a "Vitamin Bar", the inference being that one may get a snootful of gelatin highballs and have a round of fun without the usual a. m. residual.

The newspapers, magazines, and radios are all playing their part in distributing misleading facts about the virtues of certain vitamin products. The following radio plug may sound familiar to you: Have you tried s-t-u-n, the new perfect vitamin capsule? If you get tired easily, feel run down, and have lost your appetite and your best girl, then you should be taking s-t-u-n capsules. S-t-u-n's have been recommended by a special committee of doctors and have received the seal of approval of Light Housekeeping magazine. Remember, s-t-u-n, spelled backwards, is n-u-t-s." (You can say that again).

The medical profession has allowed the vitamin situation to get out of bounds so that very little scientific control of administration is exercised. Many times it comes under the head of nonspecific therapy. The indiscriminate use of vitamins may have been enhanced by a recent diagnostic innovation called "subclinical deficiency states." After all, there is considerable gelatin in these products, which in itself is an excellent protein substitute, lacking but two important amino acids, tryptophane and tyrosine.

We are fully aware of the fact that there are specific diseases that are associated with certain specific vitamin deficiencies, but symptoms such as loss of appetite, nervousness, headache, malaise, fatigue, irritability, and loss of weight are very often on the basis of something more serious than a vitamin deficiency.

Are we allowing our professional approval to be used for a nonspecific therapeutic element to build up big fortunes for pharmaceutic houses, or is there an actual need for this maelstrom of synthetic, gelatin superchargers now glutting the market?—*J. Lightbody, M. D., in Detroit Medical News*

BACK THE ATTACK! **BUY AN EXTRA BOND!**

Original Articles

THE CARE OF CLEFT LIP AND PALATE IN BABIES

A comprehensive treatise on this lesion, portraying its etiology, varieties and complications, also the time for treatment, anesthetics used, care and prognosis.

LOUIS W. SCHULTZ, M. D.
CHICAGO

The congenital lesion, cleft lip is commonly but incorrectly, called hare lip. Hare lip is a descriptive name that has been handed down because of the fancied similarity of the cleft to that in the upper lip of the hare. Hereafter the terms cleft lip and cleft palate will be used by the author.

Etiology: The cause of this lesion is not known and therefore its etiology is open to the imagination of all authors.

This condition is the result of the failure of the constituent parts to unite at the fifth or sixth week of intrauterine life. All the normal parts are there and all you have to do is unite them. Very seldom are parts missing or redundant tissue present.

The etiological factor that is most influential is heredity. The frequency of the lesion in parents and children of the same family or in several children of the same family in varying degrees suggests heredity as the likeliest cause. The lesion may very easily be overlooked for a generation or two if the deformity is minor. A bifid uvula, a slight notching of the upper lip or a congenital scar of the lip, may easily escape observation. Such may go unnoticed throughout the lives of immediate kin — father, mother, uncle or aunt, — and yet all be afflicted.

Presented before the Section of Surgery, 103rd Annual Meeting Illinois State Medical Society, Chicago, May 19, 1943.

Malnutrition is another factor thought to play an important role in the cause of cleft lips and palates. The time element of this lesion, i. e. the fifth or sixth week of intrauterine life, coincides perfectly with the time of malnutrition induced by hyperemesis gravidarum. Both occur in the fifth or sixth week of gestation. Many mothers, however, will say they were not sick a minute during the time they were carrying the child, and yet the child has a cleft. Still more mothers will say they were very sick during the early months and their children have no cleft of lip or palate.

Mechanical causes are also to be considered. In the fourth or fifth week of intrauterine life, the first branchial arch closes and forms the lower jaw. This structure, being V-shaped, is forced between the three centers of ossification of the upper jaw, by the extreme flexion of the child in utero; segments of the upper jaw, therefore, do not unite.

The tongue is relatively enormous at this time, more than filling the oral cavity; this, too, may prevent the union of the parts. Other mechanical causes are amniotic adhesions, cord interference, by being wrapped around head, tumor formation, and interference of hands and feet. The climatic changes, geographical, seasonal and barometric pressure, championed by Dr. William Peterson of the University of Illinois, must also be considered.

The last of the etiological factors mentioned in the literature are mental impressions, such as the mother seeing a mad dog, a snake, or falling down the stairs, marked the child. The tabulation shows that the true cause is not known. The author believes that heredity plays

the most important role. The inability to demonstrate a lesion on the mother or father is of no significance.

Another peculiar characteristic is that most clefts are on the left side. They vary from a very minor, hardly noticeable congenital scar, to the wide open tripartite cleft.

Physicians realize that proper treatment should be started immediately, and since most such babies are feeding problems, a pediatrician should be called in on the case, if possible, also it is preferable that the baby stay in the hospital till the lip has been constructed.

Relatives and friends will want to see the baby; if so, show a perfect baby with similar features, because they will gossip, hurt the parents' feelings and later injure those of the child. Instruct the nurse to exhibit the most beautiful blond or brunette baby, and the comment will be favorable.

The state law should make it compulsory to report cleft lips and cleft palates so that all, regardless of means, may be restored to normal as soon and as perfectly as possible. It is the responsibility of the state to care for these unfortunates when born to indigent parents, so that they may become citizens with unmarred features, with normal speech and with all the senses that otherwise might be involved, intact. This is now being done in many states.

Too much care cannot be exercised in the selection of the operator for this type of work. Loss of tissue in these parts is a very serious matter and may ruin the entire life of the individual if a poor cosmetic result or a speech defect results from improper surgery.

When to operate: Inasmuch as the weight of the baby is an important factor in determining the time for operation, it is obvious that the field nurse should know of the case as early as possible, particularly in a rural community; also a pediatrician should be in charge of the child's diet. The field nurse, in the pediatrician's absence, should be able to instruct the mother in the best methods of feeding the baby. One of the main points is to get the food into the baby in the shortest possible time with the least amount of effort on the part of the baby. The child will gain weight rapidly if it expends no energy and all the food is ingested. If the child must work too hard or too long it gets tired and goes to sleep before taking the proper amount of food. The mother can be taught to feed the baby, holding it in a semi-recumbent position to aid the imperfect swallowing mechanism. Then, if a medicine dropper with a small piece of rubber hose one inch in length on the end is used, dropper full after dropper full can be administered. A teaspoon, a small medicine glass, an asepta syringe or a Breck feeder, can also be used sometimes to good advantage. The best and most effective method is to gavage these babies by passing a small catheter and then putting on a glass funnel and pouring in the milk. The babies become so lazy they awake only to swallow the tube and then go to sleep again as soon as their stomachs are filled. Their weight curve is upward as a rule, like the normal child. The first week the baby loses weight, the second week it regains its birth weight and the third week it keeps on gaining weight showing that the diet is sufficient and agrees with it.

The surgeon decides when he should operate. The time chosen is very clearly a test of ability and experience on the part of the operator. Surely an operation of choice should not be done before three weeks of age because one can know very little about the baby in the first few days of life. It can't be known whether all the systems are functioning properly and no one wants complications of this type if they can be avoided. It is poor judgment to operate on babies in the first few hours of life, also to wait until they are one year or older up to even eight or ten years before the palate is closed. The ideal time for lip construction is at three or four weeks of age, and for palate construction, three to six months, depending on width of cleft, weight of the child and skill of the operator. The baby should be in the pediatric ward of a hospital where many children are cared for and several nurses can get the experience of handling these cases, preparing them for the anesthetic, operation and post-operative treatment.

Pre-operative Treatment: The only pre-operative treatment the author prescribes is that the baby be sent to the operating room with a clean nose, mouth and face. Naturally the weight of the child, the temperature and all other factors that might be detrimental are carefully checked. Temperature very often is elevated one or two degrees owing to the withholding of food or

fluids for too long a time before the operation. A dehydration temperature is easily determined by a careful perusal of the chart. The nasal discharge found in some of these children should not be considered too seriously when the palate is still open. The nose is constantly contaminated from the oral cavity and food and therefore, this discharge should be ignored as a contraindication for operation. Because babies cry bitterly when spoiled and left by their parents in the hospital, they become dehydrated and sometimes develop a cough, which, if unconsidered, may defer the operation unnecessarily. A temperature with a nasal discharge or slight cough is not, as a rule, considered a contraindication to operation but if rales are heard in the chest or there is a rash present, the picture is more serious and the operation should be deferred. Facial blemishes, severe eczema, etc. also are contraindications to operation.

Anesthesia: The administration of a general anesthetic to infants a few weeks old is a serious undertaking. The margin of safety is infinitely smaller than in adults. Reactions, such as shock, paralysis, and death result more quickly than in older individuals. The old adage that "A person under a general anesthetic is half dead" is not to be considered too lightly. The above quotation is stated boldly so that the ever constant danger in giving a general anesthetic to an infant may not be overlooked.

There are many methods of administering anesthetics to babies to keep them quiet during an operation. Some of the drugs used are: a sugar water sponge, whiskey, paregoric, seconal, nembutal, novocaine, and the gaseous compounds: nitrous oxide and oxygen, ethylene, vianthene, ethyl choride and ether. These drugs are used alone or in combination by many surgeons with comparatively good results. All operations do not require complete relaxation and absolute quiet, and such cases can be well handled under the influence of some of these drugs.

Since the amount of anesthetic varies in every case and in the same case at different times, the author prefers to give an anesthetic that he can control. He does not administer a drug by mouth, per rectum or intravenously in a child under six months of age.

The reaction will not be uniform in all cases even though age and weight are taken into consideration; one cannot evaluate the personal equation. Once the drug is injected the operator is well nigh helpless if the dosage has been excessive. There is no way to reduce the effect of these anesthetics so that a smooth uninterrupted, prolonged anesthesia may result when too large a dose has been given.

The margin of safety, is widest in the use of one of the gaseous compounds, or better still, the good old time-tried ether vapor.

The ability to give a good general anesthetic is acquired only by years of experience. A few weeks ago this fact was called to my attention very forcefully by the handling of a child by the anesthetist of a hospital. The infant and the nurse were in the ante room and the child was crying bitterly. I noticed the nurse trying to restrain the infant the moment it arrived in the room, a long time before the anesthetist was ready to start her work. This was as inexcusable as is the preparation of the infant for operation before it is put to sleep, such as washing the face with soap and water and then going over it with alcohol or ether and taking a cotton applicator to clean out the nostrils. Such treatment puts the child in a marked stage of excitement before the anesthetist begins. Violent crying and sobbing before the anesthetic is administered will often persist throughout the entire operation, such as, sobs or irregular, deep quick inhalations — no matter how deep the anesthetic may be. Such occurrences increase the difficulty of doing very fine surgery on a cleft lip or palate. The sobbing can all be avoided by employing a little gentle motherly love at the proper moment before the anesthetic is started. I have seen this employed many times and I am sure a much better result has been obtained because of it.

When the anesthetic is begun, the eyes should be covered with a small piece of thin rubber tissue and the mask placed over the nose; ethyl chloride should be applied to the mask drop by drop until the child ceases to cry. There are usually eight to ten outcrys before the baby is asleep. At this moment the ethyl chloride should be stopped and the drop ether method begun and continued until the child is in the third stage of anesthesia. Now the child's head may be wrapped, its face prepared by washing briskly with alcohol sponges and a second towel placed over the first. The child passes through the first and second stage of the anesthesia very quickly

and continues in the third stage nicely until the work is finished.

The four methods of giving ether for head surgery, drop ether, vapor spray, naso-pharyngeal catheter and intubation are all very good and can be given under sterile conditions. The last two methods mentioned are the most dangerous and therefore, are not resorted to for infants today as much as the first two.

Dr. Joseph Brenneman convinced me many years ago that the prevalent idea of an enlarged thymus and the x-raying of all infants for this condition previous to giving an anesthetic is erroneous. I have therefore discarded it in my technique with no ill effects. The first anesthetic given to a child is the one that is probably the most dangerous; if complications do arise they must be met. The preoperative administration of secondal, paregoris, nembutal, etc. narrows the margin of safety and should not be practiced.

The mask should not be in too firm contact with the infant's face because of the small respiratory exchange and danger of building up too great a carbon dioxide content in the blood by rebreathing.

Laryngeal spasm is sometimes very annoying. It is due to the increased sensitiveness of the tissues caused by the anesthetic, the mucus, or manipulations with an aspirator or a sponge. This can be partially overcome by placing the patient in the Trendelenburg position and aspirating only when necessary.

In the administration of an anesthetic one should be able to differentiate quickly between respiratory arrest and respiratory obstruction. These two conditions are very embarrassing and cause some excitement. The former is the cessation of respiration with no effort to breathe. It is differentiated from respiratory obstruction in which the patient makes violent though usually unsuccessful efforts to breathe. Hence one must think quickly of what may cause obstruction and forthwith eradicate the one present. The most common causes of respiratory obstruction are: position, muscular relaxation permitting aspiration of tongue, foreign bodies, mucus, blood, sponges, vomitus, laryngeal spasm, tumors, oedema of respiratory passage and external pressure on neck or chest. The embarrassment due to position as a rule can be corrected by throwing the head back and straightening the air passage by elevating the angle of the lower jaw. Aspiration of the tongue may be preventd by passing a suture through the tip before the operation and making traction. The mucus in the naso-pharynx and larynx may be troublesome at times but an aspirator clears it away. As in faulty position laryngeal spasm usually will respond to extension of the head and elevation of the chin, thus straightening the air pasage as much as possible.

Aspiration of a foreign body calls for immediate removal either by the operator attempting to or by calling in someone qualified to do so.

The easiest way to tell what stage of anesthesia the patient is in is by the respiratory exchange. If the respiratory exchange is normal, the anesthesia is not too deep. In babies this exchange is influenced quite easily and therefore should be watched constantly. Cessation of respiration in infants seldom becomes fatal if recognized early and properly treated. The problem is to get enough oxygen into the patient's lungs. These cases may be divided into three groups; first, those having a cessation of respiration without obstruction; here artificial respiration will inflate the lungs; second, obstruction without cessation of respiratory effort; here removing the obstruction permits spontaneous respiration; third, cessation of respiratory effort with obstruction; here relief of obstruction must be followed by artificial respiration. Quick thinking and acting in these caes, is far more important than the administration of drugs or waiting for relief to come.

The most common and somewhat distrubing complication of ether anesthesia is the cessation of respiration. How long should one wait before breaking operative technique and starting artificial respiration? What methods should one use to resuscitate the infant? Surely one thinks of alpha-lobelin, coramine, adrenalin, metrazol, spanking, dilation of the rectum, cardiac massage and Schafer's prone pressure method of resuscitation. The seconds, not minutes, in such a case are very precious and should be utilized to the utmost. Compress the chest once or twice and wait for about 4 or 5 seconds; if there is no response immediately inflate the child by placing sterile gauze over its face, its mouth shut, gently inflate the lungs by blowing

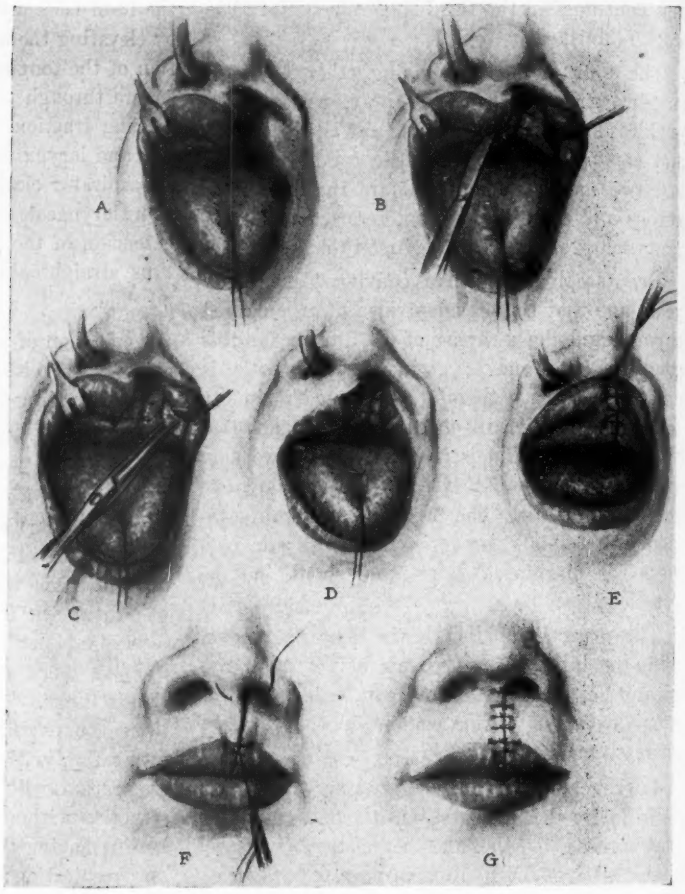

Figure 1. Modified Rose technique for cleft lip.

in the baby's nose and then make pressure on the chest wall, expressing the air and repeating this process a few times. Almost without exception the child will breathe again after 3 to 5 insufflations.

Some people think the danger of this method is great, involving contamination of the patient, risking a pneumonia, empyema, rupture of the lungs, etc. The truth is, these complications do not occur and if they did, I would still use this method because I would rather have a live baby that sign a death certificate.

Practicing this for the last 24 years has shown me that my contention is correct. If one gets a chance to save just one life by this method, one is amply rewarded.

The first few seconds, are the most precious and must be used to the best advantage. Going to the next room to get the pulmotor or even to start it functioning in the same room, adjusting oxygen, carbon dioxide, and the rhythm, — all take valuable time. The oxygen and carbon dioxide in one's breath are a perfect combination for the patient and should be made use of while the heart is still beating and thus circulating these gases in the blood.

Time For Operation: The earliest time for operation is when the baby is three weeks old and in good physical condition. At this time the diet agrees with it, kidneys, liver, spleen, gastro-intestinal tract and the circulatory system are functioning properly, and can operate with comparative safety. To operate on these babies when they are but a few hours old is poor judgment, hence the imperative necessity that operators doing this type of surgery be specifically trained. To wait until the child is two to eight or ten years old before closing the palate likewise is wrong because all the inherent qualities that child was born with are lost. The child

Figure 2. Modified Rose technique for unilateral cleft lip.

has also developed bad habits in coordination of fine lip, tongue and throat movements because of the uncorrected anatomical defect.

The type of operation and extent of plastic construction necessary, depends on the case in hand. Naturally, all cleft lips and palates are not the same. Two clefts appearing identical on the surface, may need different treatment because of the personal equation about which one knows nothing until engaged in the actual process of construction. There are many methods of correcting these defects and all have a modicum of good. The operator should select that technique which will produce the best results in his hands.

The most common cleft lip is the left sided one. The reason for this is not known. The unilateral right sided cleft lip is the next in frequency and the bilateral cleft lip the least frequent. These clefts may range from a slight notch or congenital scar in the vermillion tissue, to a very wide complete cleft either unilateral or bilateral. Other facial clefts are not considered in this paper because they are very rare and would tend to cause confusion.

The closure of a typical cleft lip in which the bony alveolar ridge is also involved, should be made when the baby is about three weeks old. At this age the bones may be reduced with ease by digital pressure and the margins freshened so that bony union may be obtained. The two bony segments are transfixed by a needle carrying a chromic 0 or No. 1 gut suture and held in apposition by tying the suture. The mucous membrane is approximated with two or three nylon mattress sutures using a No. 6-0. The soft tissues may be draped over the bone and the lip formed to normal configuration. Use a modified Rose technique, elevating the low- attached superior labial frenum to get a deeper vestibule and a more normally contoured lip. The tissues are approximated in their respective layers, viz: muscle to muscle, mucous membrane to mucous membrane and skin to skin. Special care should be given to the approximation of the vermillion border because a slight maladjustment at this

Figure 3. Modified Rose technique for unilateral cleft lip.

point will be greatly magnified in the adult lip. (Figures 1, 2 and 3).

The post operative treatment for cleft lip is relatively simple. The tension on the suture line is overcome by the application of the Logan Lip bow.[4] This contrivance can be applied whenever necessary to relieve all tension on the suture line. To prevent the habit of children to put their hands in their mouths, arm cuffs are used. The cuff is made of canvas with wooden tongue blades sewed into it. It is placed over the elbow,

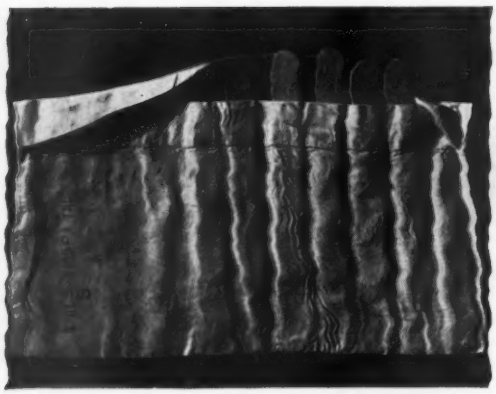

Figure 4. Arm cuffs for fixation of elbow.

tied and pinned to the gown. This prevents the baby from disturbing the lip bow or injuring the lip during the time of healing. (Figure 4)

The absence of inflammation, blood clots and crusts on the suture line indicates satisfactory healing of the lip. Serum oozing out and hardening and more serum trying to ooze out tends to spread the suture line and to produce a wide scar. *This is avoided by keeping this line clean and dry. Cleansing is done with sterile, short* cotton applicators dipped into saturated boric acid solution with which both serum and blood, if present, is removed. A through cleansing repeated as often as necessary for the first 24 to 48 hours is usually sufficient, for as a rule, no serum accumulates later. The result is good, no suture lines, no shifting of tissue, but rather a normally contoured lip. In some children these wounds will heal like magic, while others may have some induration and thickening of the lip tissues. To prevent an undue amount of contraction that may take place, massage the lip, starting four or five weeks after the operation. (Figure 5)

To massage, the baby should lie on a bed, the nurse holding the head with the left hand. Place the ball of the index finger of the right hand under the lip and the thumb on the lip. Then roll the lip between the two fingers to get rid of general thickness. This may spread the scar; if it does, discontinue the rolling and stretch the lip straight down along axis of scar to prevent linear contraction. This massage practiced for five minutes each time two or three times daily, will result in a well rounded normal lip in a period varying from two to six months.

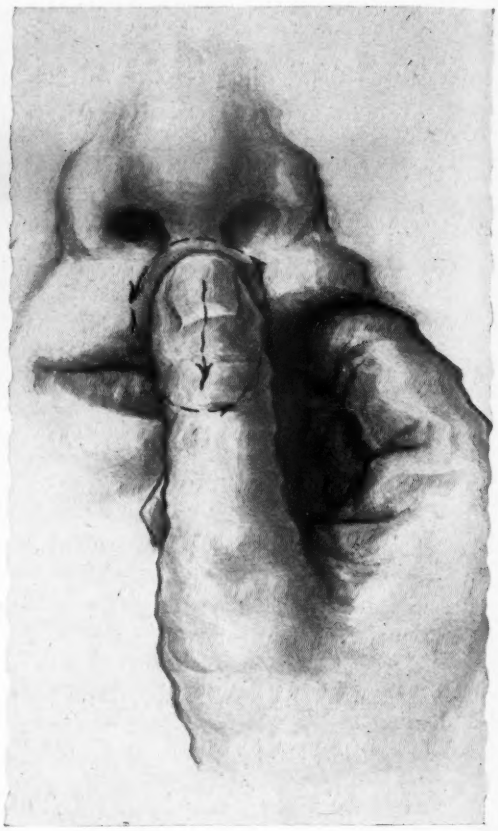

Figure 5. Post-operative massage technique for cleft lip.

As experience accumulates and results obtained are studied, modifications in treatment are adopted.

Years ago Brophy, one of the pioneers in this type of surgery, advocated the moulding of jaws to narrow the clefts of cleft palates. Many men followed this technique, which I feel was wrong. Now, some plastic surgeons doing cleft palates are willing to let these cases grow up with the deformity. There is good reason though for early and complete anatomical union. The lack of muscle balance, due to non union of the segments involved, which should unite at from five to six weeks of embryonal life, persisting to a period after birth, makes itself very manifest by the spreading of these parts. Some of these can and should be restored to normal as early as possible. For, the lip attachments are changed. The long fragment carrying the intermaxillary bone is protruding from lack of lip pressure. The nose is deflected to the opposite side of the

cleft. The tissues of lip and cheek on the side of a unilateral cleft are retruded. In bilateral clefts the bulbar tip of the nose often is depressed between widely spread alar cartilages. The columella may be wanting. The prolabium is small. The intermaxillary segment of bone is well advanced on the end of the vomer in front of the maxillary segments.

All of these deformities are present and are due to lack of muscle balance and restraint. The soft tissues can and should be restored to normal as soon as possible. The maxillary segments should not be moulded because the clefts can be closed without this disturbance, which is detrimental to future developement of the entire upper jaw. The intermaxillary segment should be reduced to its normal position when the baby is one month old. This, done carefully, will not interfere with blood supply or growth, and is the key to future development.

Bilateral clefts are the most difficult to correct if a good result is the aim. As a rule, the intermaxillary bone is detached from the maxillary bones on one or both sides; this deformity should be corrected before the soft tissues are adjusted. The soft tissues including the muscles cannot force the intermaxillary bone to position between the maxillary segments and produce bony union of these parts. The difficulties encountered in trying to move the intermaxillary bone by draping the soft tissues over it are: — first, the length of time involved, for it takes months to get the bone even partially in place; second, the lip always has a lot of suture lines and excessive scar tissue in it because of the stretching; third, more operations are necessary to get rid of scar tissue; fourth, this means sacrificing tissue that should not be lost if a perfect lip is desired; fifth, there never is bony union of the maxillary and inter-maxillary segments when this technique is used, sixth, this correction takes so long that a speech defect results from the late closure; seventh, there are fistulous tracts, often permanent, leading from the vestibule of the mouth to the floor of the nose, eighth, the four central incisors in the intermaxillary bud are attached to the end of the vomer which is very uncomfortable for the patient. Furthermore, the patient cannot bite with these teeth because of the lack of bony attachment to the maxillary segments.

All these undesirable factors are avoided if the inter-maxillary bone is brought to its normal position when the child is about one month old.

The author knows the challenge, that the growth of the intermaxillary bone is arrested. This is not true. After correcting many cases in this manner, the child develops perfectly including the inter-maxillary segment. The technique for doing this work is very simple but it has taken years to acquire. One cannot be too meticulous in doing this type of surgery. The care necessary in handling these tissues can not be over emphasized.

The inter-maxillary segment can be mobilized for reduction in two ways: — first, by making a submucous diagonal incision through the cartilaginous septum and then sliding one segment of the vomer over the other. This technique should not always be used for it may produce a nasal obstruction later in life. The other technique is to do a submucous resection of a small V-shaped section of the septum. The contact points of the intermaxillary segment with the maxillary segments are freshened by removing enough mucous membrane and periosteum to obtain bone to bone contact. The parts are fixed by passing a piece of No. 0 or No. 1 chromic gut around the intermaxillary segment or by passing mattress sutures of nylon No. 6-0 between them. This technique carefully carried out, results in bony union which is easily demonstrated. The baby should rest for at least one month and then should have the lip constructed by the technique the author has devised.

Not being satisfied with the results obtained in most bilateral cleft lip operations performed by various operators including myself, the author searched diligently for a method which would produce a more nearly perfect effect.

Having tried many of the methods described in the literature and obtained mostly poor results, the author finally devised the technique by which he can produce a much better lip in 98 per cent of these cases.

The first prerequisite to success is a large number of cases. The second is best expressed by the phrase: All the normal parts are there. All you have to do is unite them.

The transitional stages from the classical Bilateral Cleft Lip text book technique to the method now developed are evidenced by the cases

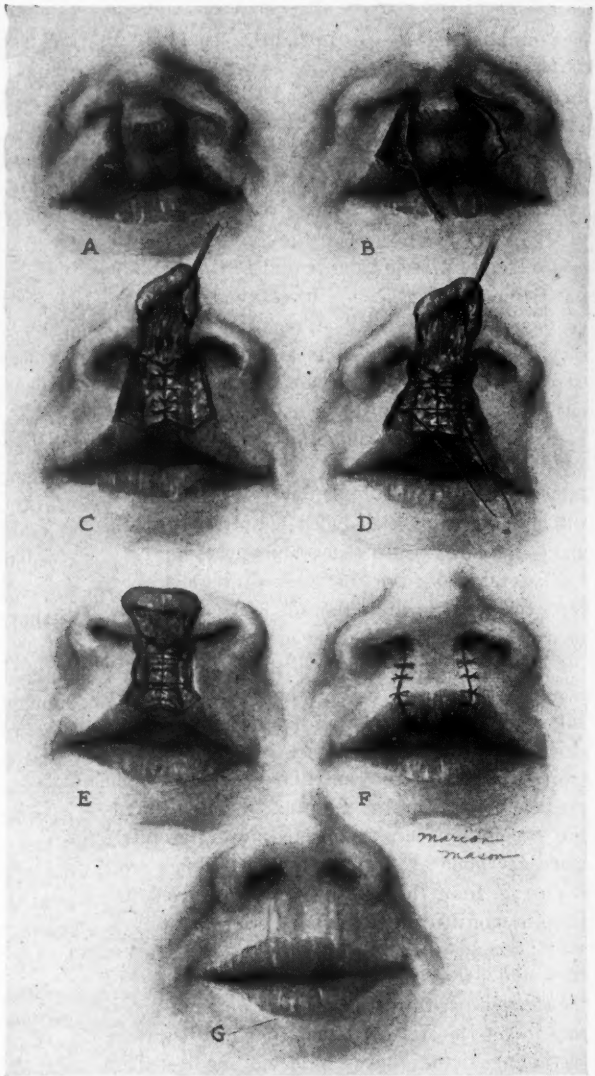

Figure 6. Author's technique for bilateral cleft lip reconstruction.

the author has operated on over a period of twenty years.

The illustration presents his technique step by step. (Figure 6 and 7.)

The incisions are made so that all vermillion tissue is saved. The normal vertical lip length is that which closely approximates the length of the skin of the bud of lip tissue overlying the intermaxillary bone. This small portion of skin and muscle develops to double or even treble its original size, sometimes very shortly after it is placed in its normal position between the lateral segments; for then muscle tension exerts its influence on this highly important portion of lip. The lateral lip segments are prepared by starting an incision high in the lateral wall of the nose, and carrying it half way through the body of the lip to a predetermined point in the mucocutaneous junction. From this point it is carried medially and at the same depth through the lip, which shows when the lip is at rest. The lingual portion of this flap and one similarly prepared on the opposite side are joined later to form the lingual surface of the upper lip.

In the preparation of the central bud, all

Figure 7. Reconstruction of bilateral cleft lip by author's technique.

vermillion tissue up to its attachment to the gum is conserved. The incision is started high in the medial aspect of the nose and carried down to a predetermined point in the mucocutaneous junction; then up through the mucous membrane, to its attachment to the maxilla and following its attachment to the maxilla to the median line. Then a similar incision is made on the opposite side of the intermaxillary bud to correspond with the one just made. Now the central flap is dissected from the bone and so prepared that it fills perfectly the missing parts: (a) skin, (b) muscle and (c) mucous membrane, to give proper contour, thickness, length and width, and is turned up out of the way. The lateral flaps containing the mucous membrane are turned linqually and united in the median line. The central flap is brought down and united with lateral flaps containing the skin — muscle to muscle, mucous membrane to mucous membrane and skin to skin. Interrupted chromic 000 catgut sutures are used for the muscles, and interrupted nylon 6-0 for the skin and mucous membrane. The nostrils should be closed with iodoform gauze impregnated with compound tincture of benzoin. The wound is to be kept clean and dry with saturated boric acid solution and cotton applicators when necessary. The logan Lip bow can be used to advantage to relieve tension on the suture lines.

The result is an abundance of mucous membrane to fill the central space formed by the dissection of the median flap from the bone. Thus, a perfect lip results, including the cupid's bow.

Bilateral cleft lip cases usually present with a broad nose. The absence of the columella and the extreme width of the nasal tip are due to the lack of antagonistic forces during the developmental stages. Since this cleft occurs five or six weeks after conception and is not corrected until several months after birth, a great deformity usually results. Normally the intermaxillary bud of lip tissue is influenced by the action of all the muscles entering into the upper lip and the orbicularis oris is in tact while in this condition. The segment contained in the bud is detached on both sides from the rest of this muscle which normally encircles both upper and lower lips. The developmental forces of the septum and dorsum of the nose are forward and the intermaxillary bud of lip tissue, if unattached laterally, is free to move forward with this tissue. Hence, the intermaxillary bud does not always develop to its normal size because the antagonistic forces could not act on this segment. This lip tissue very quickly develops when the normal muscle is established.

The correction of the lip may produce a very broad nasal tip and this should be corrected about one or two months later.

The anatomical deformity of the nose is due also to the wide separation of the alar cartilages, the fleshy portion of its tip lying between these

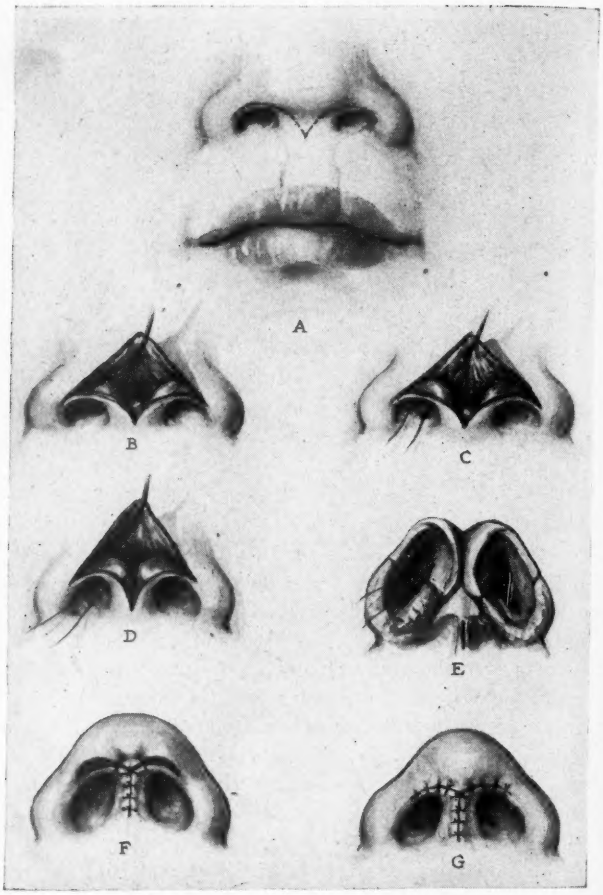

Figure 8. V-Y rhinoplasty for flat nose and columellar development.

cartilages, hence it should be elevated.

The author developed the following technique to overcome these deformities, calling it V-Y Columellar Rhinoplasty. A V-shaped incision is made into the columella, starting the lower portion of the V in the center of the columella where it joins the philtrum. The incision is carried upward and outward on each side on the lower edge of the alar cartilage. The soft tissues are dissected from the nasal spine out to the upper border of the lower alar cartilages. The portion lying between these cartilages and forming part of the tip of the nose, is dissected from the cartilages and held up by a tenaculum. The walls of the columella are approximated. Beginning at the nasal spine, a mattress suture is inserted extending through each nostril bringing the cartilages together at this point. The posterior portion of the columella is closed with interrupted nylon sutures. When near the tip, another mattress suture is placed through the anterior portion of the cartilages bringing these structures together in the midline. The remaining portion of soft tissue is now sutured to place, which gives a much sharper dorsum and tip to the nose. The vestibule of the nose now is long and narrow and both sides correspond. Development takes place and a well pointed nose results. The pictures will portray the steps described. (Figure 8.)

The suture materials used in closing cleft lips and palates are adapted to the needs of the patients. Use the following sizes and kinds, preferably mounted on atraumatic needles.

Silkworm gut or No. 0 or No. 1 chromic to transfix bony fragments.

No. 40 chromic to approximate muscle and to close nasal surface of palate.

No. 6-0 and No. 8-0 nylon to close skin and mucous membrane of lip.

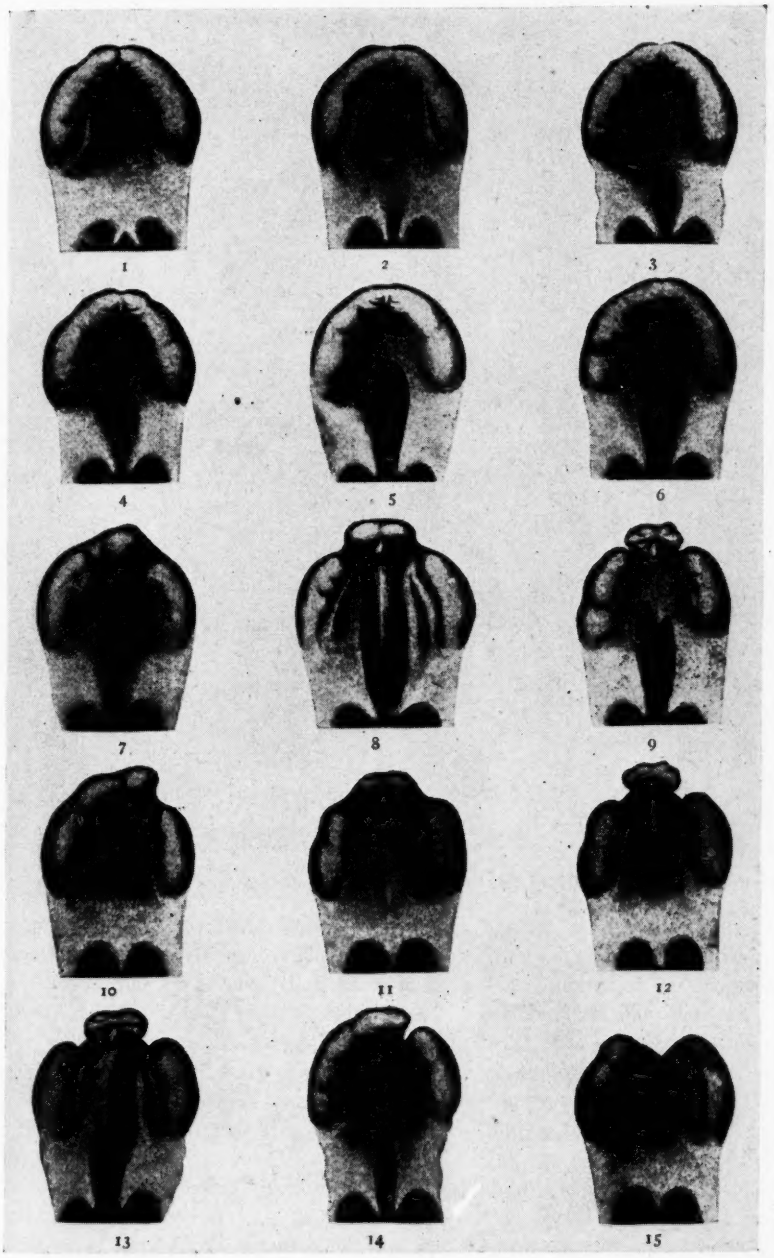

Figure 9. Brophy's classification of forms of cleft palate.

No. 6-0 Nylone to close palate. (braided nylon is not used.)

Varieties of cleft palates: Brophy, a pioneer in this work, classified clefts occurring in the hard and soft palates. The plate shows his 15 varieties and pictures all clefts in the midline. The photo and artist's drawing portray a right sided cleft that came to the author for treatment several years ago. This is the only one he has ever seen. The child also had a macrostomia and other congenital defects in the oral cavity which he corrected at the same time. (Figures 9, 10, 11 and 12.)

As in other branches of surgery, different methods are employed by different operators. For instance, Dr. V. P. Blair[3] uses the Mirault

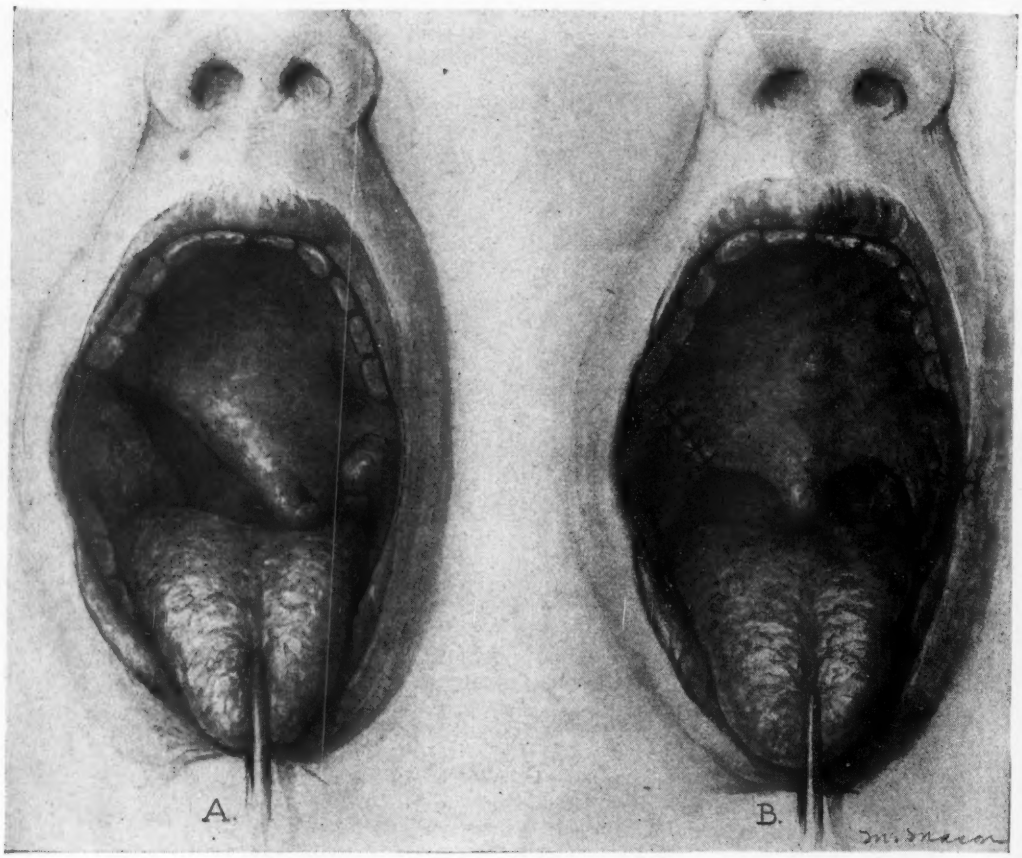

Figure 10. Artist's sketch of right sided cleft palate and macrostomia.

operation for cleft lips, which no doubt, brings the best results in his hands. However, he cautions against experimenting with various techniques, and advises that each operator find the method which yields good results and use it.

Whether the Rose or Mirault technique is used, or a modification of them, or the author's technique for bilateral cleft lip, does not matter, as long as the result is good.

Palates may be closed by the method of Ernest & Halle, Von Langenbeck, Dorrance,[11] Voe,[28] Wardhill,[29] Brown,[5-6] etc., but the technique suitable and successful for the case in hand should be chosen. Closing a palate in a number of stages should be avoided.

One comes in contact with individuals who have had many operations for the closure of these clefts. Some have had as many as forty or forty-five operations and still there is no closure. These individuals naturally have a disturbed blood supply, and therefore, construction of such palates with pharyngeal tissue is better than the use of extra oral tissue or an obturator.

Wardhill's[29] reefing forward of the superior constrictor is successful in some cases.

Particular care must be exercised in lengthening palates not to risk perforations in the hard palate when setting back the flap. If this does occur, it is best to return the flap to its original bed and try again at a later date.

The denuded bone is covered with granulations in about two weeks, and in a month one can hardly tell that the tissue was lifted and replaced.

Clefts of the hard and soft palate should be closed in one stage if possible. To close the hard palate first and later as a second stage to attempt to close the soft palate, necessitates a second anesthetic and produces an undue amount of scar tissue. The method the author

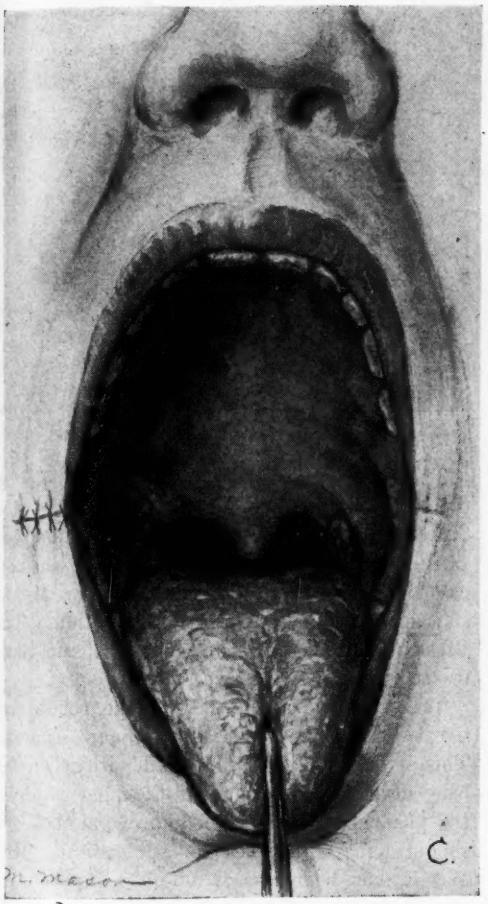

Figure 11. Artist's sketch of closed right sided cleft palate and macrostomia.

uses in closing complete clefts of the hard and soft palate is one that he has developed by taking the good points from all sources and adding some of his own. It is quite satisfactory in his hands because most of his palates close completely in one operation. When he does have a failure it is a small opening at the junction of the hard and soft palate where the cleft is widest, the blood supply poorest and the tissue the thinnest. Openings in this locality usually close spontaneously within three or four months. The baby should have a rest period of that length of time before being examined again to see if the opening has closed.

The technique he usually uses is simple. The baby is held on the table by means of a canvas strap about 4 inches wide, placed under the infant's neck and then brought over the shoulders and tied to the foot of table. This permits use of the Trendelenburg position after anesthesia is induced. The author always sits down to his work; he can work more carefully and it is less tiring. The head of the baby being low, and the feet high, blood and mucus accumulate in the naso and oropharynx, thus reducing the incidence of aspiration pneumonia.

The Lane mouth gag is used because there are no teeth present. A piece of suture material is passed deep through the body of the tongue to hold it forward during the operation. (Many of these children are partially tongue tied; if so, it should be corrected at this time. The next step is to start a line of cleavage where the palatal tissue joins that of the nose and then raise the mucoperiosteal flaps from the hard palate with the subperiosteal elevators. When sufficient tissue has been relaxed the flaps are held up alternately on each side and with a straight chisel, the mucous membrane reflected from the floor of the nose to the soft palate, is severed by running the chisel along the edge of the palate bone of the distal end of the hard palate. A fine tenaculum is now used to hold the edge of the soft palate while it is split along the medial edge. The soft palatal tissue is not cut off and discarded to get a fresh surface for this wastes valuable tissue. Use a fine tenaculum to steady the tissues, instead of a tissue forcep; compressing the tissues with a forcep is not conducive to good healing. At this point determine whether it is necessary to relax the structures still further to get good approximation without tension. If more relaxation is needed make the typical incisions at the heel of the upper jaw and with a chisel dissect and strip the tensor palati muscles off the hamular processes and pack the incision with a piece of iodoform gauze impregnated with compound tincture of benzoin to release still more the tension on the suture line. If the flaps now approximate each other without a suture, one can be satisfied that the palate will heal by first intention. The three most important factors in all plastic surgery are: adequate blood supply, relaxation of tissues so there is no tension on suture line, and proper coaptation of similar structures. The first part to be closed in the suturing of the palatal flaps is the nasal mucous membrane on the soft palate. This is approximated with number three 0 chromic gut suture

Figure 12. Right sided cleft palate.

mounted on a small full curve needle. The needle is started in the nasal surface of the mucous membrane on one side, passed out midway through the muscle in the split edge of the soft palate. Just the reverse is done on the opposite side; into the muscle and out on the nasal mucous membrane and then tied with several knots. The ends are cut off short and by means of these simple interrupted sutures, the entire nasal surface of the soft palate is closed. All the knots are on the nasal surface of this portion of the palate. The chromic gut sutures need not be removed. The number 6-0 nylon mounted on an atraumatic needle is now used to place mattress sutures throughout the length of the hard and soft palate tying 5 or 6 knots in each suture and cutting the ends off at the knot. Then simple interrupted sutures are placed along the entire palatal surface, tight enough to permit no leak of air or fluid through the suture line. This gives a broad contact of raw tissue without tension. The solid shaft nylon of 6-0 caliber gives a cleaner surface to the palate than any other suture material used. The author has tried horse hair, silk, dermal, dermic and others but none has the merits of nylon. What impressed him most with the nylon suture material is that all the sutures put into the tissues must be removed. This is not true when using other suture materials. They cut out or fall out and gather food and other foreign material and are quite dirty. Nylon remains clean, without irritation to tissues and is very strong and resilient.

This operation should be done when the baby is from two to six months old.

The babies are usually returned to bed with the suture in the tongue so that any obstruction can be readily cared for. It is removed as soon as full consciousness returns. The child can now be fed by any means except gavage or nipple, starting three hours after the operation. The Breck feeder, medicine dropper, medicine glass, teaspoon, etc., are all serviceable.

The most important part of the post-operative treatment is proper and adequate sedation. This is occassionally interferred with when the baby develops an oedema of the pharynx from the pharyngeal packs of iodoform gauze. These should remain in place for at least one week and it may be necessary to place the baby in an oxygen tent to make respiration less labored; in extreme cases it may be necessary to remove one or even both packs before the week has elapsed. Occasionally allow the packs to remain 9 to 10 days before removal. Sedation is effected with elixir phenobarbital one drachm P.R.N. to keep the baby groggy. Occassionally the child will refuse its food if the sedative is added to the milk and sometimes even when the elixir is given between meals. In such cases sedation is obtained by the use of nembutal suppositories, ¼ gr. P.R.N. These suppositories are supplied containing ½ — ¾ and one grain of the drug and must be broken and used accordingly. It is necessary to keep the patient from crying for at least one week, preferably two weeks. Usually the first week after the operation is the hardest; the child will be quiet the second week without sedation.

The loss of blood and other fluids, such as saliva, perspiration, urine and even mucus, etc.

is an important problem requiring careful attention during the post-operative period. At the time of the operation instruct the intern or resident in the immediate post-operative course to restore the fluid balance. The infants receive 20 cc of whole blood, preferably from one of the parents, immediately postoperatively, if necessary. If more fluids are desired 100-150 cc of physiological salt solution is given subcutaneously in the thigh on each side but not under pressure. Physiological salt solution, in small quantities, can be given subcutaneously with a 20 cc hypodermic syringe. All the 5% glucose and 3% soda bicarb that the baby will take, is given per mouth between meals for the first 24 to 48 hours. The importance of fluid balance and restoration of chlorides should be remembered when the infant runs a temperature. Small quantities of fluids (2 or 3 drachms) can be started in some cases at ½ hour intervals as soon as the baby regains consciousness.

Arm cuffs are important to keep the baby from getting its hands to its mouth, sucking its fingers or placing foreign bodies in its mouth. A palate can be ruined in half a minute if an arm cuff comes off and the child gets its thumb in its mouth.

At times babies develop a nasal discharge. A few drops or a spray of a 5% sodium sulfathiazole solution applied to the nares every three hours is very beneficial. Many preparations and immunizations have been used before the advent of the sulfonamide drugs, but the one above mentioned seems to be the best to date.

Some surgeons do not operate on cleft palates during the winter months. The author does not follow this procedure. Undoubtedly the babies are more prone to colds in winter, but his success has been just as complete in winter as in summer with the exception of the winter of 1939-1940. That winter 5 babies had a peculiar, uncontrollable, copious discharge, starting on the 4th post operative day. Two days later the palate opened. These cases were all operated on in the same institution and within a period of three months. It never happened before nor has it since that date.

Many articles have been written about the optimum time for closure of cleft lips and palates and just as many excuses have been offered for choosing different ages. Surely they cannot all be right.

When one weighs the reasons pro and con, one can easily see why there is such a difference of opinion among operators.

An experienced surgeon knows when he will be most successful with a certain piece of work and this, the author believes, should be the guide in setting the time for operation. The older the baby the easier is the work for the surgeon, but the more certain also that some inherent qualities are lost. The older the baby the more bad habits will it have formed. These factors lead one to close these defects as early as possible. This is good logic and *must* be decided by the success one has had at a definite age. Unlike a broken bone or a bad laceration on the arm or leg, which even with a poor correction and an imperfect result, allows the patient to carry on, a bad facial blemish or a defect of speech through life, is very serious. This statement is made because babies are born with certain inherent qualities. They retain all these qualities if allowed to develop normally. The loss of some palatal or lip tissue is quite detrimental in some cases. This is a challenge to the man doing this type of surgery, for he should aim for 100% success wherever possible. An operator who defers these operations to ages ranging from 16-18 months to what is much worse 5 or 6 years of age, often has done irreparable harm.

The author knows all these babies and children have:

1. Lost some inherent qualities, such as:
   A. All fine, coordinated movements of the lips, the tongue, the superior constrictor, etc.
   B. Speech defect is the result.
2. They are prone to develop an otitis media due to lack of ventilation of the middle ear. Some of the muscles of the palate have their origin in the cartilaginous portion of the eustachian tube and, if they can not function, prevent proper ventilation of the middle ear.
3. Chronic otitis media leads to chronic progressive deafness.
4. Improper warming, and moistening of the respired air produces an atrophic pharyngitis.
5. The entire life of the patient may be ruined by poor management of the operation and poor after care.
6. These people cannot meet the keen competition of today if they are so handicapped.
7. And last but not least, an inferiority complex develops in at least 80%, for which the facial blemish and speech defect is principally responsible.

All the detrimental features mentioned above can be eradicated by good surgery done early. Operative care of the baby, making it anatomi-

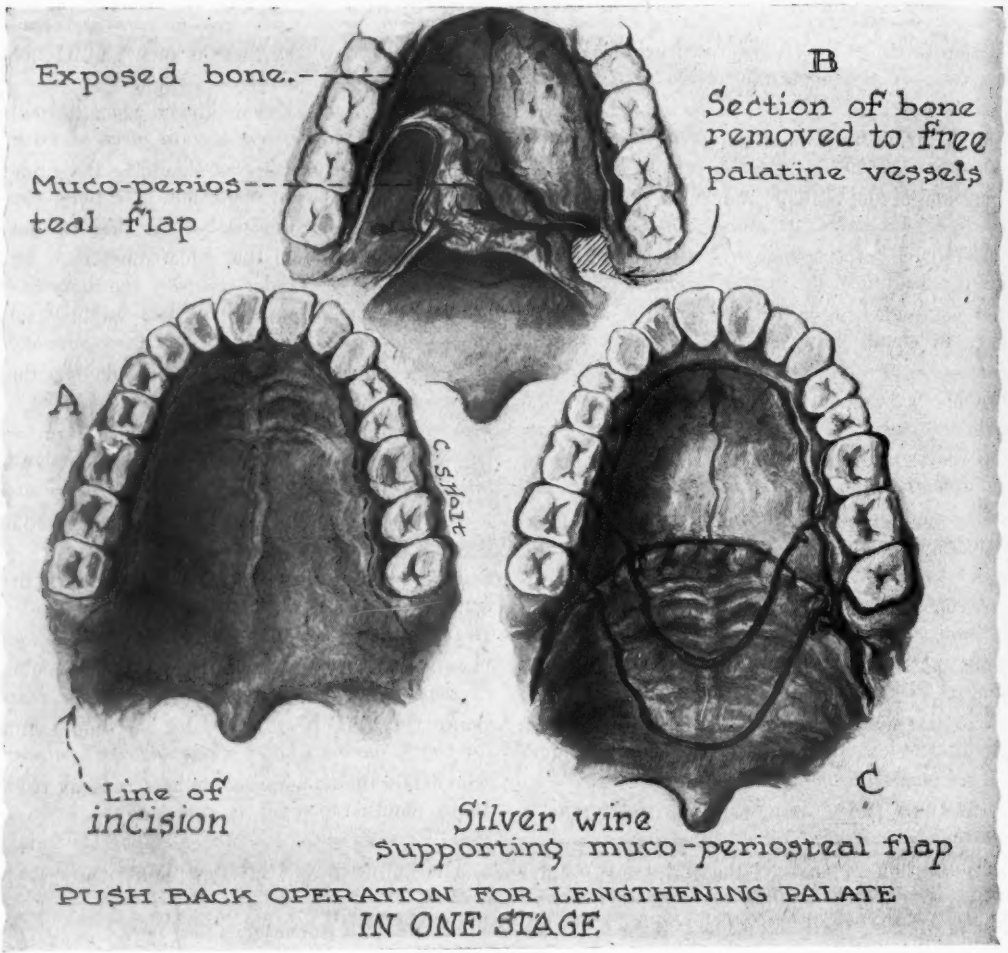

Figure 13

cally perfect before it is 6 months old is paramount. Just what is the best age to complete the closure is a problem which should be decided on the findings of the case in hand. Closure of the palate before the baby is from 4 to 6 months old, goes far to insure normal speech.

Much can be done for speech defects by surgery and instruction. The surgical correction of a short palate is best accomplished by one of several methods. The Dorrance[11] pushback operation is one of them and is done in two stages. This transposes backward the entire palate, giving additional length of ¼ inch to one inch to this structure.

In 1936 Brown[5-6] described the lengthening of palates by dissecting all of the palatal tissue from the bone and setting the flap back so the anterior border of the flap is attached to the posterior border of the bony hard palate. In this way an added length of soft palate is obtained equal to the amount of bone uncovered. The greater palatine vessels are conserved in this dissection.

The author has found this method very satisfactory in some cases because the palatal tissue does not get as heavy as in the Dorrance operation. When he uses the single stage palatal set back, he also cuts the bone away around the greater palatine vessels, and in some cases dissect out the artery from the palatal flap to get more freedom. The anterior border of the palatal flap is sutured very carefully to the distal end of the hard palate with 6-0 nylon suture material, and in older children or adults, a silver wire splint is fastened to the teeth and is arched as shown in the accompanying diagram to hold back the

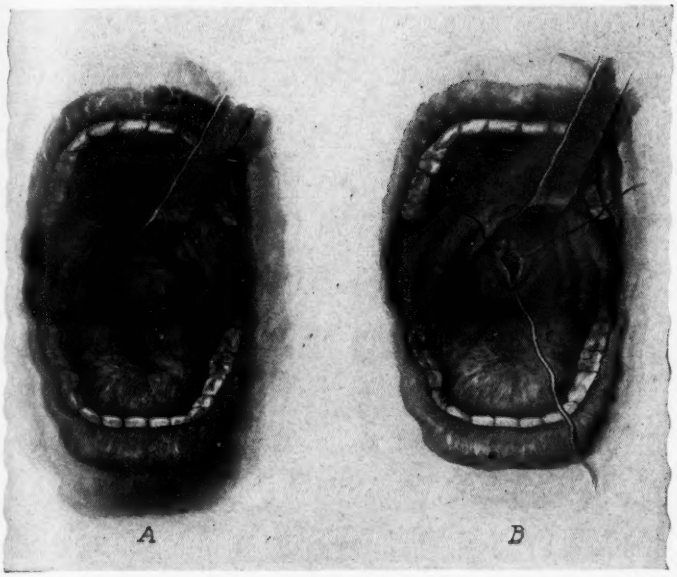

Figure 14. Reefing operation to produce Passavant's cushion.

palatal tissue still further until it has thoroughly healed. This prevents much of the shortening which would likely take place if the splint was not used. (Figure 13.)

By this method less scar tissue results, a more pliable soft palate is produced and the closure of the wide naso-paryngeal space is facilitated. Many surgeons claim the preservation of the arteries will prevent the elongation of the palate. With the technique *just described, I am sure* they will agree that the palate is markedly elongated. *If the principal blood supply is cut at* the time of operation it is best to use the delayed *flap method of Dorrance*[11]. *If the arteries have* been cut previously, it may be possible to do a direct set back if the blood supply is found to be adequate.

This wide dissection will not interfere with the levator or sphincteric action of the musculature.

The splinting of pillars and union of tissue below the level of the uvula should be discouraged because of the lack of function and the formation of a more membranous sheath without action. True, this membranous sheath is better than no tissue at all or an obturator. The tissue can usually be placed there if the direct flap method is used and if that is not sufficient, then Brown's[5-6] technique of "Double Elongations of *partially cleft palates and elongations* of palates with complete clefts," surely will give sufficient length to facilitate good speech and deglutition.

All of the foregoing corrections must be completed for perfect speech, including a perfect *contact of the palatal surface with the pos*terior wall of the naso-pharynx. In 1869 Passavant described a muscular body or what he called a "crossroll" on the posterior wall of the nasopharynx. He took the position that this *is essential for perfect speech. These observa*tions were made on an individual with a cleft *palate which made it easy to see this portion of* the anatomy. This muscular body was apparently *not discussed further until Wardhill*[29] *in 1929* said that his colleague, Whillis[30] had discovered muscle fibers in this region which caused this bunching to occur. In 1930 Whillis called this ridge the "palatopharyngeal sphincter."

Passavant's cushion or Jacobson's valve is enlarged, if needed, by bunching the superior *constrictor muscle. This is beneficial when the* naso-pharyngeal space does not close as it should. *(Figure 14.)*

The third method of closing or narrowing the naso-pharyngeal space, is the injection method, devised by the author. This consists of depositing one or two cc of a mild sclerosing agent into the superior constrictor muscle on the posterior naso-pharyngeal wall and pillars which *allows contact of the soft palate and therewith* perfect speech. This thickening of the muscula-

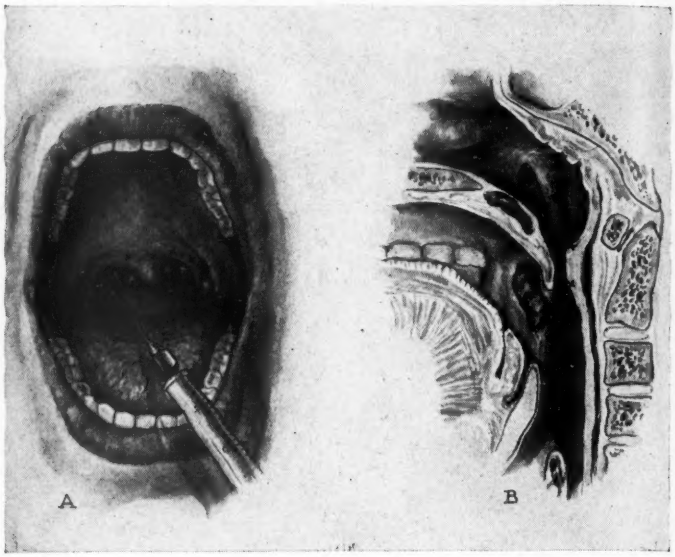

Figure 15. Injection method to produce Passavant's cushion.

ture does not last if only one injection is made, hence a series of 4 to 6 or 8 injections weekly or biweekly intervals may be necessary. A recording of the voice should be made before treatment is started and again when the treatment is completed. As a rule, there is a decided improvement in speech after the first treatment which is partially lost in a few days due to subsidence of the reaction. (Figure 15.)

A baby, properly handled, cannot appreciate what has been done for it but the parents see and note the change as the baby attains normalcy. The obligation of the surgeon does not end when the child is 4 to 6 months old; he should watch its development, see that the jaws develop normally and if the services of an orthodontist are necessary, he should so advise.

The prognoses in all these cases is good when the process of construction is carried out with forethought and skill.

SUMMARY

To summarize the most important factors in obtaining good results in cleft lip and palate surgery:

1. Sit down to do your work.
2. Start at three to four weeks of age for cleft lips.
3. Start at three to six months of age for cleft palates.
4. Baby to be of proper weight for age.
5. Diet must agree with baby.
6. Palates to be done with baby in a Trendelenburg position.
7. Use Anthony aspirator instead of sponges for bleeding.
8. Complete relaxation of tissues.
9. Conserve blood supply.
10. Use the very smallest of needles and suture material.
11. Baby should not be older than six months for palate closure unless a serious dietary or weight problem interferes.
12. Winter is no excuse to defer operation.
13. Palatal failure is due to technique, tension and blood supply, not infection.
14. Post operative treatment, as described, extremely important.
15. Place baby on side when returning from operating room so no blood or mucus will be inhaled or swallowed.
16. Fluid 30 minutes post operatively, all baby will tolerate.
17. Regular diet three hours post operatively.
18. Thin cereals to be given if baby can swallow it.
19. Allow no one to look at the palate with a tongue depressor.
20. Naso pharyngeal catheter for exygen taped to face and nose if respiratory embarrassment is present. Small oxygen tent if necessary.
21. Aspirator to be in room at all times if it is

likely to be called for.

22. Adhesive tape on lower lip if it is sucked in and blocks respiration.
23. Tongue suture to be removed when baby is fully awake and breathing normally.
24. Sedation paramount first week post operatively on palates.

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DISCUSSION

Dr. Frederick W. Merrifield, Chicago. — It is a pleasure for me to be here to discuss this paper, particularly in the light of the preliminary remarks of Dr. Schultz. When he spoke of it being a particular hobby, shall I say, of his it struck a responsive chord in my heart because you've got to like children if you get interested in this work. I appreciate his remarks, and I hope you will too, because in my opinion there is no operation, there is nothing that can be done for a child or for a human being which does so much as a repair of a hare lip or a cleft palate. The child can have club feet, can have congenital hips, can have wry neck, and those children can get by — people will come forward to help them over the rough spots — but they don't do that for a person who walks down the street with a hare lip. I think that Dr. Schultz and I agree on that point at any rate, and I don't think we are very far apart on the rest of it.

The operations done for hare lips and cleft palates are almost as old as the hills and these deformities date back to the beginning of the human race. I think it was in about 1760 that the first operation was done by a French dentist — at least that is the first recorded operation — and since that time there have been a host of men who have contributed to the knowledge and to the advancement of the art of repairing these deformities.

When I first became interested in the subject I was bewildered by the number of operations which were available and by the differences of opinion of which one could read. In sifting those out, however, there wasn't such a very wide difference of opinion. In my confusion, I talked this matter over with an old preceptor of mine, Dr. Gilmer, whom some of you may have known, and he said, "The best thing for you to do is to pick out a good operation which you know will work and then build up your own operation around that."

I think that there will be no disagreement on that advice as far as Dr. Schultz is concerned. These men have all contributed something of their knowledge and experience. Since the early days of the repair of hare lips and cleft palates there have been very many advances, and perhaps the greatest advances have been in the employment of linings for some of these flaps that are taken up. Very often the flaps were left without linings, and we now are becoming more and more aware of the changes that go on in an unlined flap. I think the chief exponent of that type of technique is Dr. Dorrance, and Dr. Ivy of Philadelphia has referred to that idea, and Dr. Schultz is using it in his work as you noticed on the film.

Another thing that has been done is to facilitate the lengthening of palates. No matter at what age a palate is corrected, some still remain short and they do not close off the nasol pharynx. Many operations have been devised to aid in doing that. Some of them have brought forward the pharyngeal wall, but the work of Dorrance and J. B. Brown has contributed to the elongation of congenitally short palates and improves very definitely the facility of the patient to speak.

What about the time of doing these operations? Dr. Schultz has told you of the early age at which he operates both lips and palates. I was brought up in a little different school, and there are many people

who believe that the operation should be done at different times.

We believe that a single hare lip should be closed as early as possible. Blair goes so far as to say that within 48 hours the lip should be closed, and he says that he believes at that time the baby has a certain immunity and can stand things that a week later it cannot stand.

Perhaps the optimal time of closing the lip is, as Dr. Schultz says, within two or three weeks, but I think the fundamental point there is that the baby should be in condition to withstand any such operation. If the baby is operated as early as Dr. Blair advocates, he contends that you don't have to concern yourself particularly about the metabolism of the baby, but at the end of two or three weeks you have found out these things; you have found out the baby is functioning; you have found out anything that can be found out about any deformities which may be associated with hare lip and cleft palate, and you have found out that a baby can take a certain formula.

To operate on a baby and to then find out that you don't have a formula under which the baby can thrive is not very good for the baby, is it, Dr. Schultz? And that is the point in favor of the operations which occur two or three weeks or longer after birth as far as the closing of the lip is concerned.

I found out something quite recently that I thought I never would come to. We had always insisted that following operation the baby should be fed very, very carefully, usually with a medicine dropper, so that the motion of the lip could be limited as much as possible. A particular baby was not doing very well, and the baby was getting no food and no fluids by mouth. Up to the time of the operation the baby had been gavaged. As I watched that baby being gavaged for the first time there was not a motion of that lip. I think a baby can be gavaged and the feeding of medicine droppers is not to be taken too seriously. If any one of you have tried to feed a baby with a medicine dropper you know it is a chore such as very few of us would care to undertake, and I am inclined to think more of gavaging for babies in the presence of a single repaired hare lip.

As far as the sequence is concerned, we have followed in our work the sequence of closing the lip first and closing the palate anywhere from eight or nine months to a year and a half later. We believe that closing the lip can be done, the repositioning of the nose and the reconstruction of the nose can be done at one operation and very early, and that the action of the lip will help close the cleft, which we don't attempt except by manual pressure. The second operation would involve the closing of the palate.

I am entirely in accord with Dr. Schultz's method of closing double hare lips. I was very glad to hear him say that they are easier than the single hare lip, and I thoroughly agree with that. They look rather hopeless to the lay person or to the medical man who is not used to seeing them, but in my own experience they are much easier to close and the results are usually more symmetrical than the single or unilateral clefts. The reconstruction of the nose and nostril and floor of the nose is, of course, the most important point in closing the single hare lip.

As far as the feeding is concerned, I think I have covered that in my remarks on the feeding of the baby under discussion. The baby should be brought to the operating room in good condition, in condition that you can control, and with the knowledge that that baby can be carried through following the operation with no adjustment necessary, and so that it will progress to complete healing and recovery from the operation.

I thought that Dr. Schultz might say something about closing of clefts by means of the repositioning of the bony structures. I know that he follows a molding method which is carried a little further than we use, but some of the men who have worked in this field have actually cut the bones to push the palate in position. We think that is a rather severe operation and we depend upon the lip to do that.

While the tongue is a very important organ, and while the inference is, in listening to the remarks this afternoon, that the tongue causes a lot of trouble in widening of the cleft, it is not true, as a matter of fact, because any one who has closed the lip and left the palate for a period of months will always find that the closure of the palate in some cases is quite remarkable and that the closure of the cleft amounts to one-half to three-quarters of an inch in some cases. We believe that it is much better to have that sort of thing done naturally than it is to interfere with bony structures and invite trouble with the nasal cavities.

The operation of the late Dr. Brophy was an operation of that type, although the bone itself was not interfered with except as it involved the passing of wires which forcefully drew the palate and tissues together. The operation was criticized for its severity, and also criticized because of the destruction and the shifting of the tooth buds. Dr. Logan, some few years before he died, developed a refined technique of that same operation in which he found ways and means of avoiding those tooth buds.

I think it is needless to say any more. I think that Dr. Schultz has made a wonderful presentation. I congratulate him on his movie which was very clear and easily seen and understood. As I say, we have used and are using a similar method of closing the double hare lip. The only other thing that I would like to say, is that in closing the double hare lip we have followed the plan of cross-lapping the vermilion border from the sides in order to avoid the shortening or to overcome the shortness of the central portion, the premaxillary portion of the vermilion border attached. A cupid's bow should be long in the central portion, and we have thought to have improved on the shortness that sometimes comes to those lips by cross-lapping the mucous membrane with the vermilion border over the central portion. Not to the degree that has been done in some cases by taking laps from the sides, cutting off the vermilion border, sewing

them together and producing a very tight lower lip which is very unsightly and not at all good, but this is merely a cross-lapping of the vermilion border itself.

I think I have been highly honored to be asked to discuss this paper. Thank you very much.

THE TREATMENT OF VARICOSITIES INVOLVING THE INTERNAL SAPHENOUS VEIN

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Before presenting the main subject of this paper, it may be well to first review certain anatomic and physiologic facts concerning the venous circulation of the lower limbs which form the basis or rationale of the modern treatment of varicose veins, in the light of the development of therapeutic procedures for this condition. First, as to anatomic considerations: the internal saphenous vein courses from the ankle along the internal aspect of the leg and thigh to empty into the femoral vein in the fossa ovalis. Unlike the deep veins of the lower limb, which are surrounded by muscles and are affected by their actions, the internal saphenous vein is situated between the subcutaneous fat and the superficial fascia. In the leg, this vein breaks up into many tributaries, while in the thigh, with the exception of its uppermost portion, it is practically a straight tube. There are normally 8 to 14 valves in this vein, equally distributed in its leg and thigh portion. Kampmeier[1], in a study of venous valves in human fetuses and adult cadavers, pointed out that there is considerable variation in the thickness and number of these valves in the saphenous system. In the specimens examined, there were found the following variations from the normal: the valves were unicuspid instead of bicuspid, or, if bicuspid, were too shallow; or, they consisted only of the media instead of the intima, media, and muscle fibers; or, were too few in number. In adult cadavers, these valves often showed evidence of retrogressive changes. It is easy to understand how these variations from the normal can contribute to the formation of varicose veins.

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The upper tributaries of the internal saphenous vein are usually five in number — the superficial epigrastic, the superficial circumflex iliac, the superficial external pudendal, the superficial medial femoral, and the superficial lateral femoral, veins. The first two tributaries sometimes anastomose with the femoral instead of the saphenous vein. The last four mentioned may reanastomose with the main saphenous trunk lower down in the thigh. Edwards[2], who made an excellent study of these tributaries, pointed out that the upper three anastomose with the main trunk less frequently than the lower two. Failure to sever these tributaries from the main vein may result in the short circuiting of a high ligation which is not followed by permanent obliteration of the saphenous vein.

Normally, the blood in the internal saphenous system flows towards the femoral vein. In the varicose state, particularly in the standing position, this phenomenon is reversed. Formerly, it was thought that reverse flow was a major factor in the chronicity of varicosities. However, it is now quite well established that it is the positive pressure in varicose veins rather than the reverse flow which is the important factor. It has long been known that the positive pressure in the saphenous system affected by varicosities may reach enormous proportions. In 1902, Delbet[3], using the direct method, obtained a reading of 260 mm. of mercury in a patient with varicose veins. Since then, it has been definitely established thru the work of Villaret[4], McPheeters[5], Adams[6], and others that the average positive pressure in the internal saphenous system moderately or severely affected by varicosities is between 60 and 85 mm. of mercury in the erect position. Adams[6], in a recent study, pointed that this pressure is a pure gravity effect and that straining caused this pressure to be markedly increased in patients in whom there was evidence of valvular insufficiency. Adams studied pressure variations in nine patients with varicose veins involving the internal saphenous system. In six of these patients, with an average pressure reading of 78 mm. of mercury, there was a rise to a figure well above the normal arterial systolic pressure on straining. In one patient, the reading was 224 mm. As was first pointed out by de Takats[7] in 1929, Adams also concluded that simple ligation had little or no effect on the gravity pressure but simply elim-

inated the pressure due to straining. It is obvious that the erect position, pregnancy, the straining associated with many types of work, with cough, defecation, and other functions are important etiological factors in the formation of varicose veins, particularly in individuals who inherit either an insufficient number of valves or valves of inferior structure. These factors are also responsible for the progressive nature of the varicose state.

The injection treatment of varicose veins was practiced extensively in this country in the period between about 1925 and 1931. However, it was soon found that this mode of treatment was followed by a high percentage of recurrence. Howard and his co-workers[8] reported a recurrence rate of 79%. It is our belief that the chief reason for the high percentage of recurrence following the simple injection treatment is that the thigh portion of the saphenous vein remained unobliterated in most cases. This was stressed by McPheeters[9] who, in 1931, stated that the existence of a column of blood in the unobliterated thigh portion exerted pressure upon the thrombosed veins below and so contributed to their recurrence. McPheeters[5], in 1932, in order to eliminate the patent thigh portion, recommended injection of the internal saphenous vein from ankle to upper thigh in one sitting without, however, a preliminary ligation. Thrombosed veins, unless accompanied by a severe periphlebitic reaction, have a tendency to recanalize. The added factors of gravity and straining pressures hasten the process of recurrence.

In 1930, de Takats[10] introduced the operation of preliminary vein ligation in this country. While this operation was done earlier in Europe by Home[11], Trendelenburg[12], and others, it should be pointed out that these earlier surgeons performed this operation in the region of the knee and for the purpose of eliminating back pressure in extensive varicosities and ulcers or for obviating embolism in the injection treatment. De Takats stressed that this operation should be done at a high level and as an ambulatory procedure. While simple ligation followed by injections of sclerosing solutions resulted in fewer recurrences, it was soon found that recanalization occured in many instances. We feel that the chief reasons for these recurrences are the same essentially as those mentioned for the simple injection treatment. In women, in whom varicose veins occur in the ratio of 3 or 4 as against men, the thigh portion of the internal saphenous vein is often covered by a rather thick layer of fatty tissue. This factor, plus the relative collapse of the veins following simple ligation, due largely to the elimination of the straining pressure, make palpation of the saphenous vein in the thigh for the purpose of injection rather difficult. While the effect of the straining pressure is eliminated by ligation, a gravity pressure equivalent to the height of the thigh portion of the vein remains as a factor in recurrence.

In 1934, Faxon[13] and Howard[14] independently suggested retrograde injection with a sclerosing solution during high vein ligation. As in the case of simple ligation, retrograde injection was also practiced earlier by Tavel[15], in 1904, and Moschowicz[16], in 1927. However, both these writers performed this operation in the lower thigh and employed coagulants instead of the sclerosing agents used today. They also put their patients to bed for a week or more, a procedure which obviously favored embolism. Since 1935 or 36, this method of treatment has been generally accepted as productive of the best results. Obviously, it insures obliteration of the thigh portion of the saphenous vein which is necessary in order to eliminate the effects of gravity and straining pressures which contribute to recurrence.

However, severe and disabling reactions accompanied by fever often follow retrograde injection. Lowenberg[17], in 1937, in order to avoid the disability, pain, and swelling resulting from the chemical thrombophlebitis of the whole internal saphenous system, stated that he regularly ligated this vein at the level of the knee prior to high ligation and retrograde injection. Harkins[18], Hawkes and Hewson[19] stated recently that they have abandoned retrograde injection because of severe reactions requiring bed rest. Our experience has been essentially the same since 1936, when we began to employ retrograde injection. We found that one-half to two-thirds of patients thus treated had to be put at bed rest for periods of 5 to 10 days. This of course defeats the ambulatory nature of the injection treatment.

Since the advantage of retrograde consists in its insuring obliteration of the thigh portion of

the internal saphenous vein, a method, preferably non-operative, which will limit the chemical thrombophlebitis to the thigh portion would be desirable. I have described such a method in detail in a previous publication[20]. Briefly, it consists of producing a thrombotic barrier in the saphenous vein at the level of the medial condyle of the femur by the injection of a sclerosing solution. 175 patients have now been subjected to this procedure. In 108 cases, a satisfactory palpable thrombus was obtained after the first injection. In 46 cases, 2 to 4 injections at intervals of 3 to 4 days were necessary, while in 19 cases no thrombus was obtained after 4 injections.

The experience with 2 patients was illustrative of the importance of recognizing and properly treating those patients with a history of, or definite evidence of, phlebitis. In the case of these patients, no history of previous attacks of superficial phlebitis was obtained at the first examination. Injection of 1 c.c. of Sodium Morrhuate at the knee was followed in each case by thrombophlebitis involving the vein and its tributaries from groin to lower leg. Further careful questioning of these patients disclosed that 2 to 3 years previously there had been redness and tenderness over the veins of the leg. This procedure, we believe, should not be employed in cases with a history of superficial phlebitis or those who present evidence of previous attacks, such as old, organized thrombi, discoloration of the skin over the veins, induration, etc. It is our belief also that only a simple ligation be done in these cases, since often this is followed by retrograde thrombophlebitis of the whole saphenous tree and also because retrograde injection usually results in very severe reactions in these cases.

High ligation and retrograde injection is done 8 to 10 days after the successful injection at the level of the knee. This interval of time is necessary in order to insure a firm thrombus. Not more than 2 to 2½ c.c. of sclerosing solution need be injected to insure obliteration of the thigh portion of the vein. About two weeks later, the injection of the patients leg varicosities is begun and is continued at weekly intervals.

The majority of the 154 patients thus treated have not experienced any disability beyond the first day. We believe that this method eliminates the undersiable features of retrograde injection by limiting the inflammatory process to a smaller area and by making locomotion easier.

SUMMARY

1. The more important anatomic and physiologic facts which contribute to the etiology of varicose veins and which form the basis for the modern treatment of this condition are reviewed. Their relation to the gradual evolvement of the high ligation-retrograde injection treatment is discussed.

2. High ligation and retrograde injection, when successful, is followed by thrombophlebitis and periphlebitis of the whole internal saphenous tree from groin to ankle. Often, this causes disability of a week or longer.

3. The thigh portion of the internal saphenous vein must be obliterated in order to attain permanency of results.

4. The experience with 175 patients in whom a non-operative method for limiting the thrombophlebitis to the thigh portion of the vein is presented.

5. It is concluded that this method is associated with a minimum of disability and discomfort.

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DISCUSSION

Dr. Geza de Takats, Chicago: I have been rather embarrassed by the prominent mention of my name by Dr. Gault in connection with ambulatory vein ligation. I assure you I did not have the opportunity to read his paper beforehand since I would have tried to point out to him that the first ambulatory vein ligation was performed by Celsus 400 years before Christ.

It is interesting to read the description of this operation and to realize that one-third of Celsus' patients became delirious, probably due to sepsis, and another third became "melancholy" or died, probably because they developed an embolism. It certainly is a far cry from these attempts to decrease the back pressure from above to the modern asceptic methods of treatment.

This problem has been neglected for many, many years, and this problem is important because at least 10 percent of the adult population suffers from varicosities of various intensity. Today we know that a large number of young men can be rehabilitated for the armed services if these varicosities can be adequately treated.

I think it bears emphasis that the routine injection of the varicosities is a useless procedure. It is true that the patients obtain some temporary relief, but the percentage of recurrence, as Dr. Gault has pointed out, is so high that ultimately these patients will have to obtain relief by vein ligation.

There is no earthly reason why this vein ligation cannot be carried out by the general practitioner who does his own minor surgery, except that it should be realized that an adequate vein ligation, as Dr. Gault emphasizes, should include all the visible tributaries of the internal saphenous vein.

This operation is a slow, delicate procedure. For some time we have been timing these operations and have found that it takes us a little longer to do an adequate vein ligation than to do a lumbar sympethectomy. It takes from 35 to 40 minutes to do a careful dissection of the entire region, to inject the solution distally and to secure complete hemostasis.

Dr. Gault has emphasized the point, that unless the thigh-portion of the saphenous vein is obliterated the percentage of recurrence will be high. That is very important. One procedure that we have followed in our work is to use a much milder irritant for injecting the distal segment than the type of irritant that we use for injecting the varicosities in the lower legs. Mild irritants, such as 50 percent dextrose and 20 percent salt solution will perhaps produce less phlebitis than the usual injection of sodium morrhuate or other fatty products.

The causes of failure which occur, even though the vein is adequately ligated, even though the distal segment is injected, and even though the perforators are injected below the knee, come from one single cause, and that is the existence of increased venous pressure in the deep circulation.

The most frequent cause of this increased venous pressure is, of course, a previous thrombophlebitis in the deep veins. When the syndrome is recognized, one must admit that all efforts to obliterate the saphenous vein by a combination of high ligation and injections is futile.

The incidence of this high deep venous pressure is not very great—it is perhaps from 3 to 5 percent of the varicosities that we see—but when a physician recognizes this I think it is wise for him to tell himself and the patient that any effort to obliterate permanently the saphenous vein is just temporary and will be followed by a recurrence.

I want to emphasize again that while the problem of varicose veins has always been regarded as an unimportant one, a minor surgical one, it is a very frequent condition, generally rather poorly treated, and that in times of war it will rehabilitate a large number of young men for the armed services.

Thank you very much.

COLIC DUE TO CRYSTALURIA

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Crystals in the urine are found under a variety of conditions, both normal and abnormal. It is a condition which usually causes little or no inconvenience to the individual; however, following the use of sulfonamides without adequate alkalinization, painful extra-renal deposits without stone formation are seen. This same course of events occurs among troops stationed on coral islands in the South Pacific, evidently due to large amounts of calcium in the drinking water. During five months at an evacuation hospital serving in this area, fifteen percent of all urological admissions were due to ureteral "sludge." No uncomplicated cases of gonorrhea were admitted.

All of these patients were of military age, usually in the third decade of life. Their army service varied from six months to ten years and their tropical duty from two months to a year. All phases of army activity, from service work

in a quiet area to combat on the ground or in the air were represented in those observed. The ratio of colored to white was about the same as that among the entire army population. None had previous sulfonamide medication. No cases occurred in troops at posts where distilled or rain water was used. No patient in the group had a previous history suggestive of urinary calculus or colic prior to coming to this area.

The attack usually came on rapidly, seldom abruptly, with unilateral or, less often, bilateral pain similar to but not as severe as colic due to calculus. It was sometimes preceded for several days by burning on urination. The pain occasionally appeared first as a dull ache in the flank and then increased to its greatest severity within a few hours. At its height it was often accompanied by radiation to the inguinal region, the penis, the testicle or the upper inner aspect of the thigh on the affected side. Some gave a history of minor similar attacks which were relieved spontaneously, occurring since arrival in the tropics.

Accompanying the attack there was usually an urgent desire to urinate. Some passed fairly large amounts but frequent small amounts was the rule. Moderate burning or scalding sensation occurred during the passage of the stream and mild terminal pain was frequent. Some patients noticed and commented on the cloudiness of the urine they were passing. Urination gave no relief and gross blood was never present. Large amounts of cloudy urine were often passed shortly after the pain ceased.

Vomiting was rarely seen altho nausea was sometimes present. Sweating, cool skin, pallor and other evidence of mild shock occurred in the severe cases. The attack was sometimes relieved spontaneously in from one to forty-eight hours but occasionally required morphine and atropine. Nitroglycerine was not used, as those who needed immediate relief were first treated at the company aid stations where morphine is readily available. Patients who received no medication and required a day or more to arrive in the hospital often had spontaneous relief.

Physical findings were few. There was flank or suprapubic tenderness but these were of short duration and disappeared on relief of the pain. The temperature was normal or slightly subnormal. Laboratory studies were of a limited nature due to the forward location of the evacuation hospital. On admission each patient had a flat plate of the abdomen, a urinalysis and a complete red, white and differential blood cell count, the presence or absence of malarial parasites being noted. Before discharge to duty, all had either an intravenous or retrograde pyelograph made.

Nearly all urines were strongly alkaline; a few were neutral or weakly acid to litmus paper. The one constant finding was large amounts of calcium salts. This was in excess of that found in those who were hospitalized for any other condition. Occasionally a few red or white blood cells or cylindroids were found. Blood studies were normal.

Cystoscopy was performed in about half of these patients; in about one-fourth of those so examined there was a slight edema about the ureteral orifice of the affected side of a mild hyperemia of the entire bladder. The latter finding was seen most frequently if examined early in the attack.

X-ray findings were usually normal. In a few instances, where the plate was made at the height of the pain, the position of the lower ureter was hazily outlined. Comparison with later films in which an opaque medium had been used substantiated this finding. Films made after the disappearance of the pain never showed this shadow. Pyelograms were uniformly normal as all cases showing any abnormalities or calculi were eliminated from the group. If made early, a slight dilitation of the ureter might be apparent but disappeared on subsequent studies. Constrictions were never noted.

Immediate treatment for those in severe pain consisted of the administration of morphine, sometimes with atropine; this was never repeated after entrance to the hospital. Reliance was placed on flushing the pelvis and ureters with large amounts of fluid which were usually well tolerated by mouth. In addition, the urine was acidified by administering four grams of ammonium chloride daily. Where pain persisted beyond twenty-four hours, retrograde washing of the kidney pelvis and ureter was done with sterile distilled water or physiological saline solution. Citrate solutions were not used because the results were uniformly good with the methods employed.

On their release from the hospital, these patients were instructed to use sodium chloride tablets, one-half gram three times a day, to drink at least three canteenfuls (three quarts) of water daily and to use adequate amounts of cevitamic acid which is supplied by the army in the form of citrus fruit juices made up in the field from powders and concentrates. No follow-up has been possible because of troop movements, however, there were no re-admissions of any of the men who remained at this base.

DISCUSSION

These loosely formed crystaline collections are probably primarily due to the large amounts of calcium present in the drinking water combined with the profuse sweating that takes place even on moderate exertion. Fluid balance is easily maintained in hospitalized patients in the tropics as has been pointed out by Ferguson*, the records for whose communication were derived from the study of patients in this hospital, but for reasons as noted may not always be present among troops. While drinking water was always available, the men frequently neglected to use adequate amounts because it became warm in their canteens or meant a walk to replenish their supply. Water is usually obtained directly from streams or by drilling either shallow or deep wells into the coral beds that make up a large part of Australasia. This water, whether from a stream or a well, has filtered through and been in contact with lime salts until it has become a saturated solution. Before use all water is chlorinated. As noted above, the condition did not occur in troops using calcium free water.

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*Ferguson, James H., Correspondence by, J.A.M.A., Feb. 26, 1944, Vol. 124, No. 9, pp 596.

Civilian physicians need feel no chagrin when they see their colleagues in uniform. They can serve their country with the same high patriotism and with more lasting benefit to its health if they will solemnly agree to press relentlessly and with reborn ardor the fight along the home front for the conquest of tuberculosis. Kendall Emerson, M.D.

THE MEDICAL MANAGEMENT OF JAUNDICE

FREDERICK STEIGMANN, M.S., M.D.†
AND
HANS POPPER, M.S., M.D.‡

Investigations of recent years have somewhat simplified the medical treatment of jaundice. They have shown that, indepedent of the cause (with the exception of the rare cases of hemolytic jaundice), the disturbance of the liver cells is somewhat identical in catarrhal jaundice (due to alimentary intoxication), infectious jaundice following various infections (upper respiratory infection, virus infection, pneumonia, etc.), toxic jaundice following exposure to, or medication with, hepatotoxic substances (arsenic, cinchophen, carbon tetrachloride), jaundice of pregnancy, Weils disease, or jaundice in cirrhosis as a sign of an exacerbating acute hepatitis. The differences are more a question of degree of liver involvement than of type. This group of diseases can be classified as parenchymatous or hepatitic jaundice, or, as medical jaundice.

However, in jaundice due to changes in the biliary passages (tumors, stones, scars), commonly called surgical jaundice, similar changes in the liver cells may be present, as is found in medical jaundice. The retention of biliary substances causes damage to the parenchymatous cells and prolonged duration of the obstruction causes secondary hepatitis. Thus, there is a graded difference only between liver cell involvement in medical and surgical jaundice although this difference is important for diagnosis.

If we thus assume that the anatomical and functional disturbance of the liver is nearly identical in surgical and medical jaundice, the treatment should also be identical. Unusual diagnostic skill, therefore, is not required for medical treatment, but only to decide if additional surgical treatment is indicated.

The above points indicate that medical and surgical jaundice require the same medical man-

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agement. Such management should be curative in the medical type, and prophylactic, curative and preparatory for surgery in the surgical type of jaundice.

Knowledge of the pathological physiology of the liver is limited and the management will, therefore, take into consideration only the known facts. The results of physiologic and pathologic research of the last decade have proved to be valuable in the management of medical and surgical jaundice.

In this paper we discuss the management of jaundice, based on the experiences of others and our own. Since most functions of the liver are related to metabolism, to detoxification, and to excretion of foodstuffs, liver function can be most easily influenced by diet and the dietary regimen overshadows all other forms of treatment.

One of the oldest experiences in the pathologic physiology of the liver was that animals with livers rich in glycogen withstood various intoxications better than animals with a fatty liver. Therefore, increase of the carbohydrate intake and reduction of the fat is one of the oldest principles in the treatment of jaundice. Modern physiology has shown that the deposition of glycogen in the liver is dependent on a certain level of the blood sugar. In liver disease this regulation is disturbed and the blood sugar level must be higher than under normal conditions before glycogen is deposited[1]. An occasional additional disturbance is present from the hypoglycemic tendency in some liver cases. All this points to the necessity of a high carbohydrate supply in cases of liver disease. This should be around six to eight grams per kilogram of body weight.

A great difficulty in treatment may be early distaste for sugars (carbohydrates) which increases if the sugar administration is excessive. This is enhanced by the general anorexia. Therefore, sugar is best given in the form of fruit juices — of which lemon and grapefruit are the best. Fruits and vegetables high in carbohydrates, such as pears, peaches, bananas, pineapple, berries, beets, carrots, peas, potatoes, corn, are other good sources of carbohydrates. However, the oral administration of sugars will seldom suffice to raise sufficiently the blood sugar in severe cases. In these intravenous sugar administration is indicated. It should be kept in mind that a great part of the intravenously administered sugar may not be utilized for nutrition. Some may overflow into the urine. The use of insulin, previously recommended in these conditions, appears irrational as it would lower the blood sugar level by utilization of sugar in the periphery.

The amount of glucose solution given intravenously depends on the concentration. Most of the clinicians prefer a 10% dextrose solution in distilled water, thus providing sufficient fluids to combat dehydration of the body — 1,000 to 2,000 cc. daily is usually given depending on the severity of the case, i.e. depending on how much carbohydrate can be given orally. If the liver is smooth, large and tender, a higher glucose concentration is advantageous. In such cases a toxic edema of the liver may be assumed. This hydro-hepatosis is due to a damage of the walls of the sinusoids in the liver which causes an escape of fluid-binding proteins into the perivascular spaces which in turn leads to an enlargement of the liver and stretching of Glisson's capsule. The latter accounts for the occasional occurrence of pain in the right upper quadrant in cases of hepatitis. The associated edema of the gall bladder bed in such cases may at times simulate an acute cholecystitis with localized tenderness in the gall bladder region. In such instances, hence, the administration of 500 cc. of a 25% glucose solution daily may dehydrate the liver itself and relieve discomfort. This higher concentration in addition is more prone to raise the blood sugar level to the optimal height.

The omission of fats in the dietary management of the jaundice case is an old principle. Limitation of fats in the diet reduces the fat content in the liver. It also reduces bile flow and even bile production and thus permits the liver to rest. The animal fats particularly are to be limited because in contrast to milk and butter fat they may lead to gastro-intestinal irritation which is undesirable since such patients have a priori dyspeptic symptoms.

The administration of proteins to jaundice patients was very much debated in the past. At present the question is settled. Originally the thought prevailed that protein administration means a burden for the liver since de-aminiza-

tion of the amino acids with urea formation occurs in the liver. Furthermore, since protein stimulates bile production the administration of protein counteracts the principle of rest for the organ which would seem desirable. However, regeneration of any organ and also of the liver requires sufficient protein. Animal experiments in the laboratories of Whipple and Ravdin primarily demonstrated that protein depleted animals stand hepatotoxic drugs much worse than those fed sufficient protein. Protein depletion means in this respect not only hypoproteinemia but also reduction of the protein stores of the organs before even the plasma protein level declines. Hypoproteinemia is a definite hazard by enhancing edema formation, interfering with healing and intestinal motility. In addition protein has a definite lipotropic action. Since some of the amino acids, e.g. methionine, definitely reduce the fat stores in the liver it is now realized that the old low protein diet in liver disease was harmful.

Not only is the quantity of protein important but equally so is the quality (type of the protein). Various experiments on animals with intoxication or with Eck fistulae have shown that meat is harmful to the liver in comparison to other protein sources. Much evidence, obtained mainly from animal experiments, points to the extractives of meat as responsible for this harmful effect. This, however, has not been sufficiently established in clinical cases and would, hence, require controlled experiments on a wide clinical material. Until the effect of meat in liver disease has been definitely established, it seems advisable in view of the animal experiments to provide jaundice patients with high amounts of protein obtained from other than meat sources. To provide a high protein diet, i.e. about 2 Gm./Kg. body weight, is difficult from only lacto-vegeterian sources because of lack of variety. Consequently the diet should be supplemented with accessory substances rich in protein as amino acids. The use of amino acids as protein source has become popular and they seem to offer real progress in protein nutrition. Our experience with amino acids confirms the satisfactory results of others. Amino acids can be given orally in amounts of 50 Gm. or more daily, thus providing anywhere from one-third to one-half of the required protein. They can also be given intravenously if oral administration is impossible as in postoperative or in coma cases. The patient can be kept in nitrogen balance by parenteral solutions only, if amino acids are given (all oral feedings being omitted).

An important consideration in jaundice is the caloric intake. The total caloric intake should be high, not only for possible wastage of food because of impaired intestinal absorption, but also because of the existing malnutrition or because of increased demand due to associated infection. Even for the bed ridden patient, around 40 calories/kilogram body weight are indicated which can be provided by 6-8 Gm. carbohydrate, by 2 Gm. protein and 1 Gm. fat per kilogram body weight. Sufficient amounts of fat and carbohydrate are necessary to prevent the proteins or amino acids from being used as energy carriers and to thus save them for utilization for regeneration of tissues or blood protein. The lipotropic action of amino acids in the 2 Gms. protein/kilogram suffices for taking care of the gram of fat/kilogram. This consideration of providing sufficient energy by carbohydrate should be kept in mind particularly when amino acids are given intravenously in order that the latter should not be burned up for energy.

The mineral requirements in jaundice are apparently not markedly altered. Occasionally, low blood chloride levels are found associated with changes in the acid-base balance producing a picture of an extrarenal azotemia. In cases of low blood chloride — which is an index of a low sodium — saline should be given intravenously or the salt intake should be raised. Several workers attach great importance to the administration of calicum in patients with liver damage. This is given best as a 10% solution of calcium gluconate intravenously, once or twice daily.

Regarding the amount of fluids, oral or intravenous, required by the jaundice patients, one finds himself between the Scylla and Charybdis. On the one hand the patient should not be given an unlimited amount so as to produce edema because of the increased avidity of the tissues for water in liver damage. On the other hand, enough fluids should be given to prevent dehydration and acidosis. The clinical condition

of the patient — fever, chills, sweats, edema, ascites (post-operative stage) — will determine the amount of fluids needed. The appearance of the tongue is probably still a good guide for determining fluid needs.

The role of vitamins in the management of jaundiced patients can be looked upon from two angles. First from the point of view that the vitamins protect the liver and help in its repair and, secondly, that the liver influences vitamin metabolism since the liver represents the most important store for many vitamins. Animal experiments indicate that in the unidentified parts of the vitamin B complex there are substances which are necessary for adequate functioning of the liver and successful treatment of liver cirrhosis has been reported by nutritious diet and supplements rich in vitamin B complex. Consequently in the treatment of jaundice, crude vitamin B-complex preparations are indicated from which these unidentified parts have not been removed. As long as these fractions are not known it is best to feed the patients yeast powder, 2-3 ounces daily, preferably in tomato juice. Only in cases where yeast is not tolerated B-complex preparations may be used. For parenteral administration crude, highly colored liver extract is preferable. The high potency concentrated liver preparations used in the treatment of pernicious anemia have possibly lost these B-complex factors.

Choline which some consider a fraction of the B-complex has strong lipotropic action in decreasing the fat content of normal and pathologic livers. Liver cirrhoses have been produced by choline-free diets or disturbance of the nutrition related to chlorine deficiency and several reports have appeared of successful therapy of human liver cirrhoses with it. One to two grams of choline hydrochloride daily have been recommended as the dose in liver disease. We used soybean lecithin — 30 Gms. daily — as a source of the choline. This lecithin preparation contains 4% choline. Given in form of a sandwich and sugared, it is quite acceptable.

Since the liver stores many fractions of the vitamin B complex, liver damage will interfere with such storage. In addition, high carbohydrate intake in liver disease increases the demand for vitamin B. Hence, signs of vitamin B deficiency, such as an alcoholic neuritis, glossitis, intestinal disturbances with characteristic x-ray findings in the small intestine may appear, especially in chronic liver disease. Therefore, the food should be rich in the known fractions of the vitamin B complex also (thiamin hydrochloride, riboflavin, nicotinic acid, etc.). If yeast and accessory feedings rich in B are given, the demand is probably fulfilled. Otherwise, vitamin B preparations should be given additionally, especially if the patient does not eat well. In cases of mere intravenous nutrition, high amounts of injectable preparations of vitamin B factors should be given. In our cases solution Vitamin B Synthetics was found very helpful.

A specific relation between vitamin C and liver function has not been established. However, the general importance of vitamin C in surgical and inflammatory conditions points to vitamin C as a useful factor in liver disease. In the preparation of a diet for jaundice patients, therefore, a liberal amount of vitamin C should be included.

Of the fat soluble vitamins, vitamin A has been most studied, most intensively in its relation to liver pathology, because of available methods. The vitamin A level is low in liver disease due to (a) impaired intestinal absorption, (b) impaired regulation of the blood level by the liver and (c) due to increased avidity for vitamin A by the pathologic fat stores in some instances. Both animal and clinical experiments have demonstrated that the blood level of vitamin A can be raised to a functioning level only after the administration of huge doses of vitamin A orally. From our observations we would recommend 50-100,000 Units vitamin A as the daily dose in a jaundiced patient. Similar considerations as for vitamin A hold true for vitamin D.

The importance of vitamin K (which is necessary for prothrombin formation) in jaundice is now well established, although its mode of action is uncertain. Bile is required for oral absorption of vitamin K. The damaged liver, however does not sufficiently store it. In liver damage, moreover, the prothrombin formation is interfered with even in the presence of normal amounts of vitamin K. Consequently, in complete biliary obstruction, low prothrombin blood levels occur due to impaired vitamin K ab-

CHART NO. 1
Solid (Meat Free) Diet

Breakfast	Amount	Proteins	Fats	Carbohydrates
9% Fruit	200 Gm.	6	—	18
Cooked Cereal	200 Gm.	4	2	16
Sugar	10 Gm.	—	—	10
Toast	40 Gm.	4	—	21
Butter	10 Gm.	—	9	—
Egg	1 Gm.	6	6	—
Coffee				
Sugar*	10 Gm.	—	—	10
Milk	200 Gm.	6	8	10
9:00 A.M.				
Milk	100 Gm.	3	4	5
Brewers Yeast	25 Gm.	12	—	10
Dinner				
Egg	1	6	6	—
3% Vegetable	100 Gm.	2	—	3
6% Vegetable	100 Gm.	2	—	6
18% Vegetable	100 Gm.	3	—	18
Bread	30 Gm.	3	—	16
Butter	6 Gm.	—	5	—
12% Fruit	150 Gm.	3	—	18
Sugar	20 Gm.	—	—	20
Milk	200 Gm.	6	8	10
Jello	100 Gm.	3	—	22
2:00 P.M.				
Brewers Yeast	25 Gm.	12	—	10
Milk	100 Gm.	3	4	5
3:00 P.M.				
Dietene	50 Gm.	16	—	28
Milk	150 Gm.	5	6	8
Crackers	2			
Lecithin	15 Gm.			
Supper				
3% Vegetable	100 Gm.	2	—	3
6% Vegetable	100 Gm.	2	—	6
18 Vegetable	100 Gm.	3	—	18
9% Fruit	200 Gm.	2	—	18
Sugar	20 Gm.	—	—	20
Bread	30 Gm.	3	—	16
Butter	6 Gm.	—	5	—
Milk	200 Gm.	6	8	10
8:00 P.M.				
Dietene	50 Gm.	16	—	28
Milk	150 Gm.	5	6	8
Crackers	2 Gm.			
Lecithin	15 Gm.			

TOTAL: Proteins 136—Fats 70—Carbohydrates 385
TOTAL CALORIES — 2714
100 Gm. or more of carbohydrates are given as a 10% (or higher) dextrose solution intravenously.

sorption. This is easily corrected by parenteral vitamin K administration.

In severe liver damage, low prothrombin levels may appear due to both absorption damage for vitamin K and inability to form prothrombin. This can only be corrected by continuous vitamin K administration, often several times daily. Since it is clinically difficult to evaluate the requirements, repeated prothrombin determinations should help in guiding the vitamin K therapy. This consideration is especially important in the pre-operative treatment since the prothrombin level may change in a few hours. Synthetic vitamin K preparations are water soluble and can thus be given parenterally or orally without the additional administration of bile salts. The amount given depends on the prothrombin level. The average daily dose of 2-3 mg. of any good preparation usually suffices.

The above considerations presented have been utilized in the preparation of the following diet used at the Cook County Hospital. (Chart No. 1).

In addition to the non-dietary treatment of the jaundiced patient, the following points should be considered.

The rationale of bile acid therapy in the treatment of jaundice has been well outlined by Ivy and associates. Briefly, it can be mentioned that bile salts are useful whenever a choleresis appears desirable — as in chronic hepatitis or incomplete obstruction from any cause. For the production of choleresis the unconjugated, oxidized bile salts are best, because they produce an increased flow of thin bile. The bile salts (0.3-0.6 Gm. after meals) not only produce choleresis but also aid in the absorption of fats and vitamins from the intestine. In acute hepatitis and complete obstruction the use of bile salts is a moot question. In acute hepatitis they may have no influence on the damaged liver or may even stimulate an organ requiring rest. In complete obstruction, they may increase the back pressure. It is as yet not established whether the latter mentioned side effects may not surpass the beneficial effects of bile salts therapy.

Regulation of bowel movement is important in the jaundiced patient since many toxins acting on the liver come from the intestine. A saline laxative 15 Gm. or more daily of either a phosphate or sulphate is a good practice.

Nausea is often an unpleasant symptom in jaundice. Withholding of food often relieves this symptom. In some, small doses of morphine, 1/8-1/6 gr. and atropine, 1/120 gr., will aid.

Pruritus, often found in jaundice, offers a difficult therapeutic problem. Acetylsalicylic acid or ergot preparations (Bellergal) are helpful in some cases. Warm baths, cold enemas are of aid in others. In cases with localized pruritus, anesthetic ointments are useful. Clinical observation seems to point to the fact that jaundiced patients who are on a good dietary regimen are less troubled with pruritus.

The use of sedatives is frequently necessary. Since the liver conjugates barbiturates and morphine, the use of either must be judicious. Whenever possible bromides should be used.

Since liver damage may occur following the administration of sulfonamides, the use of these drugs in jaundice was debated. Recent evidence, however, which we can support with personal experiences points to the fact that sulfonamides may be used in jaundice if the need arises from some intercurrent infection.

SUMMARY

1. The medical management of jaundiced patients should be independent of the etiology of the jaundice (except for the hemolytic type).

2. A high caloric, high carbohydrate, high protein — meat free, low fat diet, supported by intravenous sugar administration is recommended.

3. Vitamin B complex is best given as yeast powder or crude liver extract. In addition choline (or lecithin) should be given.

4. High doses of vitamin A and D are recommended. The vitamin K administration should be regulated by the prothrombin level.

FIND THAT PENICILLIN PERMITS EARLY SKIN GRAFTING ON BURNS

Investigators Say Results In 17 Patients Indicate Use Of Drug Solves Problem Of Loss Of Grafts From Infection

Penicillin appears to be the solution to one of the chief problems involved in early skin grafting of burned areas, John Winslow Hirshfield, M.D.; Matthew A. Pilling, M.D.; Charles Wesley Buggs, Ph.D., and William E. Abbott, M.D., Detroit, report in *The Journal of the American Medical Association* for August 12. They report that from their experience with 17 patients to whom penicillin was administered at the time of skin grafting they believe that the use of the drug permits early skin grafting and also appears to prevent the loss of skin from infection that ordinarily occurs in about one third of the cases in which split thickness grafts are placed on contaminated hecipient sites. Nineteen split thickness grafts were performed on the 17 patients. With one exception, from 90 to 100 per cent of the transplanted skin took in every instance, the exception occurring in an uncooperative alcoholic addict on whom 80 per cent of the grafts took.

"Before penicillin was available," they say, "we performed over a hundred grafts in patients with third degree burns. Although many excellent takes were obtained, in about one third of the cases 25 per cent or more of the graft was lost because of the occurrence of infection. Therefore the consistency with which excellent takes were obtained in this series of 19 grafts has been very impressive to us. . . . ."

The authors point out that "Few patients are more miserable than those with large unhealed third degree burns. Early skin grafting of the burned areas is the only means of quickly returning these patients to a useful life. The longer this procedure is delayed, the greater the immediate threat of death and the ultimate development of scars and deformity. The aim of all treatment, therefore, is reepithelization (regrowth of the covering of the skin and mucuos membranes) of the burned areas as promptly as possible. In general, it requires from one to three months to achieve this aim. . . . ."

They say that the necessity of grafting the same area more than once is the chief factor tending to prolong the convalescence of such patients, and that infection is the chief cause of failure of skin grafts to take.

All of the 17 patients received penicillin by injection into the muscles (intramuscular), the dose and the duration of treatment varying somewhat from patient to patient. In general, penicillin treatment was started about twelve hours before operation and was continued until the time of the first dressing.

"The administration of penicillin," they say, "did not seem to alter the bacterial flora a great deal; cultures taken at the time of the first dressing from the margins of the grafts and from the sutures usually yielded the same organisms that were present on the granulating surface before grafting. In spite of their persistence, they did not seem to affect the growth of the graft. Penicillin, therefore, must hold them in check until the new skin has a chance to become established in its new bed."

Industrial Health

Committee On Industrial Health — Frederick W. Slobe, Chm., 2024 South Western Ave., Chicago, Frank P. Hammond, H. A. Vonachen, R. I. Barickman, C. O. Sappington, Milton H. Kronenberg.

RECENT DATA ON HEALTH HAZARDS IN WAR INDUSTRIES

LIEUTENANT-COLONEL W. J. MCCONNELL, M. C., U. S. A.

In speaking of industrial health and hygiene problems in war industries, much of what can be said applies to industry in general — nearly all industrial plants have been affected by some fundamental changes in machinery, processes, and materials. Under the pressure of the War, an ever increasing use of new chemicals and the reappearance of old ones, many more toxic than the ones they have replaced, has created a problem of serious magnitude. The War likewise is increasing the number of inexperienced workers and those of advanced age who have long been unemployed. Old standards of physical fitness for employment have had to give way to a more realistic approach in the matter of putting the physically substandard applicant to work.

Industrial absenteeism, under war conditions, has become alarmingly high and at times has seriously interrupted the production of greatly needed materiel. The causes are many, and these vary from plant to plant and from industry to industry, and any attempt to apply a single formula to the problem as a whole is futile. Sickness, either physical or emotional, accidents, and excessive fatigue no doubt account for a large percentage of cases of absenteeism, but overcrowding in the plant, frustration caused by green authority, and the migration of workers, particularly from the country to the city, and the associated changes in working, home, inadequate transportation, and community conditions contribute in no small measure to loss of production hours.

Accumulated evidence, however, points to sickness as the most frequent single cause for absence from work. Although the truly occupational diseases account for only a small percentage of the total cases of illnesses, they are tremendously important in particular types of work and their incidence in many industries has never been so great as at the present time. However, their early recognition, and the improvement in methods of controlling harmful exposures have greatly diminished their seriousness.

In a number of operations, the industrial dermatoses far exceed the definite occupational intoxications. Skin contact with materials such as tetryl, TNT, DNT, fulminate of mercury and others, may cause a sensitization dermatitis, while substances like ammonium nitrate, antimony sulfide, and an ever increasing variety of solvents act as skin irritants.

More serious than the dermatoses, however, are the occupational intoxications from exposures to toxic dusts, fumes, gases or vapors, which, unless adequately controlled, may reach unsafe atmospheric concentrations.

Among the more common offenders in Ordnance establishments which must be guarded against are: trinitrotoluene and dinitrotoluene, either alone or in combination with other explosive materials in the form of a dust, fume or vapor, depending upon the particular operation; the nitrogen oxide gases; and new explosive compounds, the composition of which cannot be dis-

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closed at this time. Also encountered in certain of these plants are operations giving rise to some of the more familiar atmospheric contaminants. To mention only a few, carbon monoxide may be found during ballistic testing; lead fumes or dust also may be encountered in testing and in other operations, as lead bullet casting, lead melting, burning, pouring and soldering; mercury vapors in mercury crack testing; metal fumes of all kinds in metalizing operations; and vapors of a variety of volatile solvents in degreasing, decarbonizing, and paint spraying operations. While all these present special problems, accumulated experience from various sources over a period of years has indicated the approach to the solution of controlling these hazards in most instances. Experimental work being carried on in some of our munitions plants is providing the answer in other instances.

Appraisals of occupational health hazards in these plants, as in all Army-owned plants, are made by experienced personnel of the Army Industrial Hygiene Laboratory, and of the Division of Industrial Hygiene of the National Institute of Health, and management is informed regarding necessary measures for correcting existing hazards, and for improving health services. These surveys are provided as part of the Army's industrial medical program under the general supervision of the Chief of the Occupational Hygiene Branch, which has been established in the Division of Preventive Medicine of the Surgeon General's Office.

Private commercial establishments handling explosives and assigned to the Safety Security Branch of the Ordnance Department for continuing protection responsibility are encouraged to request similar surveys through the Regional Safety and Security Branch Offices. By arrangement with the Public Health Service, the various official state and local bureaus of industrial hygiene have been asked to participate in this program, wherever available.

The Surgeon General also is charged with the responsibility for making all necessary provisions for the emergency treatment of military personnel and civilian employees at Army-operated plants; and for the establishment of proper standards of industrial medical services in Army-owned, contractor-operated plants, and for necessary control and inspection to insure compliance with such standards. Similar technical services falling in the field of Safety are provided in Ordnance establishments assigned to the Safety and Security Branch of the Office of the Chief of Ordnance for continuing inspection responsibility, by safety auditors who advise the operating management of protective measures against unsafe practices. In all other Army-owned plants, the responsibility for safety rests with the Service Commands under the general supervision of the Provost Marshal General's Office.

The medical department of each plant is adequately staffed and equipped to carry out an industrial health and hygiene program best suited to the needs of each facility. Recognizing that prevention is a cardinal principle for lowering the incidence of disability whether through accident or disease, it is an essential requirement that preplacement physical examinations be made on all applicants for employment. This is necessary for protecting the worker from engaging in work for which he is physically or mentally ill-adapted and which might result in serious impairment of his health. If, on the other hand, his defects are detected and evaluated, he can be placed in a job that involves no further risk and may be expected to continue employment as a useful and productive workman.

Periodic physical examinations, when they can be done, are of course well worth while, but under present circumstances they usually must be limited to certain groups of workers who are exposed to toxic substances.

The diagnosis and treatment of minor ailments of employees who are ambulatory and working, as well as special diagnostic procedures of those whose work involves exposure to toxic substances and chemical hazards, are essential functions of the medical department. A good industrial health and hygiene program provides also for medical supervision of plant hygiene and sanitation; for immunization of workers against those communicable diseases which are preventable; for supervision of the plant cafeteria; for a planned program of employer health and safety education; and for the maintenance of accurate individual sick records in such a form that they can be easily tabulated and studied in an effort to detect and control excessive illness.

Special procedures applicable to workers engaged in areas where there is an exposure to certain toxic material must be rigidly enforced for their protection. An entire change of clean work clothes, including undergarments, should be furnished these particular workers. Showers at the end of the shift should be mandatory. Special soaps have been developed which effectively remove such substances as TNT and tetryl, and are recommended for use. Detector solutions should be applied to the skin surfaces on occasions to determine if the substances are being adequately removed. Suitable protective clothing, such as gloves, sleeves, aprons and respirators should be furnished to workers on jobs where such protective measures are indicated. Protective ointments may be indicated for the face, neck, and hands of workers handling certain substances.

Wherever management has actively supported a comprehensive health program and enforced rules regarding employee self-protection, the occupational dermatoses and intoxications among workers are comparatively few and lost time from these and other illnesses is minimized.

INDUSTRIAL HYGIENE NEWS LETTER

The Industrial Hygiene Division of the U. S. Public Health Service, Bethesda, Maryland, in their monthly news letters, continue to publish informatory data relative to industrial hygiene and toxicology. The following are some recent excerpts.

1942 SICKNESS RATES AMONG MALES HIGHEST IN TEN YEARS[1]

In a forthcoming paper, "Sickness Absenteeism Among Male and Female Industrial Workers, 1933-42," based on 8-day cases or longer, Dr. W. M. Gafafer reports, among other things, that the male rate of 106.1 absences per 1,000 for 1942 for all causes is the highest recorded annual rate since 1933 and is 16 percent greater than the 10-year average of 91.1. The female rate of 168.4 for 1942 for all causes is also the highest recorded annual rate since 1933, being almost 60 percent greater than the corresponding male rate and 14 percent in excess of the 10-year average of 148.1. For the males each broad sickness group for 1942 shows a rate that has never been equalled or exceeded since 1933 while for the females only the non-respiratory non-digestive group is so characterized. There are certain specific causes for males which show for 1942 the highest rates for the 10-year period and at the same time yield relatively high excesses when compared with the corresponding averages for 1933-42. These causes with their excesses are pneumonia, 83 percent; bronchitis, 44 percent; and diarrhea and enteritis, 38 percent. The corresponding causes for the females are diseases of the organs of locomotion except diseases of the joints, 85 percent; pneumonia, 81 percent; and neurasthenia, 41 percent.

NEW PROTECTIVE DEVICE FOR WELDERS[1]

The Southern California Division of General Motors Corporation has developed a new respiratory protective device for protection against inhalation of smoke while welding. This device, which has been named the "Breatherfier," consists of a multiperforated air dispersal block worn on the chest of the worker just under the lower edge of the welding hood. Air is supplied by the standard respirator hose.

Many of the employees who have used the Breatherfier find it more comfortable than the air supplied hood or face type respirator. The Breatherfier keeps the face clean, prevents goggles from fogging badly, and welding smoke or odor from reaching the face. Consideration should be given to the application of this device to ship construction, especially to welders working in double bottoms or other closed places.

ACUTE FATAL CASE OF CADMIUM POISONING[2]

In an Indiana plant, one worker died within 4 days after a prolonged exposure to high concentrations of cadmium fumes. This death could have been prevented if someone responsible for setting up manufacturing processes had remembered that cadmium was very toxic and that if the metal was heated the workers would be exposed to high concentrations of a poisonous material.

The deceased worker undertook a job of "flanging" two-inch cadmium plated stainless steel pipe. To produce a flange, the pipe was heated with a blow torch until the pipe became a cherry red color. Soon after beginning the operation the employees complained about irritation of the nose and throat as well as the thick blue smoke present in the workers' environment. Within 4 hours, two employees were violently ill and were taken home. Vomiting, chest pains and shortness of breath were the chief symptoms at this time. The chest symptoms increased in one worker and within 4 days this worker died of a severe chest involvement.

This case again emphasizes that cadmium is a very toxic element and that cadmium plated steels should not be welded, heated, brazed or burned unless the job is well controlled. Such operations must be done in conjunction with properly designed and properly maintained local exhaust systems, for cadmium is more toxic than lead. — Dr. Louis W. Spolyar, Director, Indiana Bureau of Industrial Hygiene.

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1. August, 1943.

2. November, 1943.

DANGERS OF X-RAY RADIATION IN MASS X-RAYING[3]

The greatly increased use of the chest x-ray in mass surveys of industrial workers and other groups requires continuous vigilance to safeguard from over exposure to roentgen rays both the operators of x-ray units and the persons being examined.

Lead screen protection for the operators, proper spacing and careful checking of equipment, and frequent blood examination of operators are necessary precautions. The dangers of such exposure have been thoroughly studied by the Tuberculosis Control Section, States Relations Division, U. S. Public Health Service. To aid the technicians of this section, a blueprint chart has been prepared showing the proper spacing of the mobile photofluorographic equipment now being used in the Public Health Service tuberculosis case finding program. Copies of this chart and detailed information can be obtained upon request to Senior Surgeon Herman E. Hilleboe, Tuberculosis Control Section.

A timely warning on the "Danger from Fluoroscopy" appearing in an editorial of "Minnesota Medicine," June 1943, written by K. Wilhelm Stenstrom, Ph. D., Professor of Biophysics, University of Minnesota, has been reprinted in the November 1943 "Tuberculosis Abstracts," published by the National Tuberculosis Association, 1790 Broadway, New York City. This editorial states that "roentgen rays from fluoroscopic units have caused innumerable sequelae to both patients and physicians and serious damages often still result in spite of the knowledge that now is available." The rules for safety in avoiding both electric shock and roentgen ray exposure are specified.

CARBON TETRACHLORIDE POISONING IN PARACHUTE FACTORY[3]

The cause of illness among 135 employees in a Kentucky plant manufacturing parachutes was traced to carbon tetrachloride used for cleaning soiled spots on the chutes, on investigation by the Kentucky State Division of Industrial Hygiene. The outbreak of illness occurred during a period of 10 days, and was manifested by abdominal cramping, nausea and vomiting. Some individuals complained of "bloating and difficulty in breathing." Many employees were acutely ill and unable to continue work. The illness lasted from 2 to 5 days in the average case although a number of the workers continued to feel bad after resuming work.

The possibilities of food poisoning were ruled out by questioning of ill employees about food consumed in the 48 hours preceding onset of illness. The absence of fever and diarrhea indicated that the disease was not an intestinal disorder of bacillary origin.

On further study, the nursing records revealed that a great many employees complained of frequent or even constant headaches, and complaints of gastric distress had been especially numerous for several weeks.

The fact that the incidence of the disease was restricted to workers on the first shift, and to those whose work placed them in the same environment, pointed to some special factor such as a toxic chemical.

A check of the records revealed that out of 137 sick employees, 135 had been engaged in sewing and cleaning the nylon used in manufacture.

It was found that more cleaning of the chutes had been done in recent weeks and that at times "pure carbon tetrachloride" had been used in place of the usual solvent. The solvent was used freely from open containers, and an estimated 4 gallons of this solvent were used daily.

With the beginning of the cold weather season 5 or 6 weeks ago, ventilation was provided only by opening windows along the skylight, side windows being closed. Since the fumes of carbon tetrachloride gas have a density 5.3 times that of air, they could only be removed by vents at floor level. It was significant that the first noted symptoms began only a few weeks ago coincidental with the beginning of heating, and consequent reduction of ventilation in an effort to conserve fuel.

The recommendation made for substitution of some other solvent was quickly adopted. The use of carbon tetrachloride was immediately ordered discontinued, and cleaning of parachutes is now being done with mild soap and water.

FUMES FELL 38 WORKERS[3]

Such were the headlines in all the Boston, Massachusetts, papers on December 11, 1943, when, according to the newspaper accounts, 38 women employed at a Cambridge plant had fallen unconscious from a mysterious gas. For the moment it appeared that the Cocoanut Grove tragedy had been repeated on a smaller scale.

Investigation by members of the staff of the Massachusetts Division of Occupational Hygiene revealed that the "mysterious" gas was carbon monoxide and that, of the 38 workers affected, only 8 required hospitalization for a single night. There were no fatalities nor apparent sequelae. Atmospheric contamination with carbon monoxide occurred from the use of 2 brazing furnaces and a combustion chamber in which illuminating gas was reduced to a mixture of carbon dioxide 8%, carbon monoxide 12%, and nitrogen 80%. A leak was found around the sight glass of the combustion chamber, but the primary cause of the poisonings was the breakdown of a ventilating fan.

Although the plant was immediately shut down, the furnaces were run experimentally at night, and within 1 hour concentrations in excess of 100 p.p.m. were found with a temporary 16-inch fan in operation. Experimentally, 20 minutes after the fan was stopped, concentrations in the workroom reached 280 p.p.m. Steps instituted to prevent a recurrence included more adequate exhaust ventilation, a carbon monoxide alarm and segregation of the furnaces from the main workroom.

3. January, 1944.

The moral of this story would seem to be that a situation involving an extremely "close call" for a sizeable group of workers might at any time be duplicated in many plants in Massachusetts and other States, and that operations such as the one in question call for more attention than they have been getting. — *Manfred Bowditch, Director, Massachusetts Division of Occupational Hygiene.*

DERMATITIS AMONG WELDERS[4]

Recently a group of women welders at a California plant, engaged in the fabrication of metal war materials, suffered an acne-like dermatitis on the neck and lower parts of the face. Inspection of the working environment revealed no unusual conditions. It was determined, however, that each of these workers at some time had worked at a job which consisted of welding an ungalvanized lug to a disc. Inspection of the discs disclosed that they were coated with a very thin film of oil which was applied at another plant. A conference with the manufacturer of the discs revealed that the oil was used primarily to aid in the stamping operation as well as to protect the iron from rust. The oil contained 30 percent chlorine and 20 percent sulphur and could be classified as a chlorinated hydrocarbon evolved by the heat of the welding.

These facts indicated that the dermatitis was a chloracne resulting from exposure of the skin to a chlorinated hydrocarbon vapor. Scrupulous personal hygiene on the part of the workers and the removal of the oil from the metal before welding were recommended as control measures. The California Bureau of Industrial Health find these are the first reported chloracne cases from such a cause.

METHYL ETHYL KETONE CAUSES DERMATITIS[4]

A request for an investigation of an outbreak of dermatitis was received by the Dermatoses Section, Industrial Hygiene Division, U. S. Public Health Service, from a Louisiana plant using methyl ethyl ketone. Previous investigations made by this Section show that a high concentration of methyl ethyl ketone vapors cause dermatitis and irritations of the mucous membrane, and that this condition occurs among workers coating fabrics with vinylite where methyl ethyl ketone is used as a solvent.

X-RAYS EMITTED FROM CERTAIN ELECTRONIC TUBES DURING THEIR MANUFACTURING AND TESTING[4]

Recent studies in a Pacific Coast plant engaged in the manufacture of certain electronic tubes revealed the production of x-rays as indicated by approved methods of detection. At least one previous investigation of this question elsewhere had failed to show any such exposure to the workers engaged. It is felt that increased operating voltages which are now used cause a real hazard both in manufacture and operation of these tubes.

4. March, 1944.

CARBON TETRACHLORIDE POISONING FROM CORE PAINT IN FOUNDRY[4]

Recently the Industrial Health Hygiene Service, Tennessee Department of Public Health, was requested to make an investigation in the core department of a foundry where cores were being "painted" with a material called "Superflake Molduko." In this foundry, the liquid "Molduko" was put in open gallon cans and graphite added. The operation of painting consisted of partially dipping the core and applying the mixture with a brush. Another workman placed them in a furnace for drying. Certain of the employees working on or near this operation became ill, resulting in considerable lost time.

Investigation of the composition of "Superflake Molduko" has shown that it consists of carbon tetrachloride and petroleum distillate. Carbon tetrachloride is probably present in excess of 25 percent.

The painting of cores to obtain a smooth surface is a common practice in foundries, although the nature of the materials used for this purpose will vary. On the basis of this experience it would seem advisable to consider the nature of the material used in the operation when making industrial hygiene investigations.

CARBON MONOXIDE POISONING[5]

Recently a physician in Montana designated carbon monoxide as an important contributing factor to the illnesses of two garage employees, one of whom recovered and the other died. The men had complained of headaches and occasionally of nausea at the end of a working day, but there was no known history of acute carbon monoxide poisoning.

The management of the garage requested a study by the Montana Division of Industrial Hygiene. The study revealed that without any automobile motors running, the carbon monoxide concentration was maintained in excess of 250 p.p.m. throughout the shop. Seven old gas-fired unit heaters located about the garage were determined to be the sources of the carbon monoxide. The orifices of these heaters had been reamed out to allow a greater supply of natural gas, but the air supply had not been increased accordingly. New heaters have been installed and tests now show that the carbon monoxide concentration remains below 75 p.p.m. even with all doors and windows in the shop closed.

A FATAL CASE OF ETHYLENE CHLOROHYDRIN POISONING

A workman in a Los Angeles manufacturing plant, while cleaning trays upon which rubber strips were stored, used a petroleum hydrocarbon solvent of the kerosene range. The supply of the solvent being temporarily exhausted, the man then used anhydrous ethylene chlorohydrin for the same purpose. He was careful to wear impervious rubber gauntlets. The room was large and well ventilated, but he was exposed to the vapors of the solvent.

5. April, 1944.

When after 2 hours the workman became very ill, he was taken to the dispensary and 5 hours later removed to the hospital where he died, 11 hours after he first started to use the solvent. The man was 61 years of age and in excellent physical health up to the time of this illness. It was found upon investigation that he had been exposed to an average concentration of vapor of about one milligram per liter of air (305 p.p.m.)

Six white mice were exposed to a similar atmosphere and all were ill in an hour, with a downhill course after 2 hours, exposure was then ended and 4 hours later one of the mice died while the others were extremely ill. In 24 hours, the five mice were again normal.

Autopsy of the deceased, evaluation of the exposure and duplication of the exposure in laboratory animals with similar pathological findings, led to the conclusion that death was due to anhydrous ethylene chlorohydrin, proving that the solvent is dangerous even in relatively low vapor concentration.

THE AMERICAN ASSOCIATION OF INDUSTRIAL NURSES

The American Association of Industrial Nurses will, on October 1, launch its drive for new members. This national association was organized in 1942 in recognition of the growth and expansion in the field of industrial nursing.

Though the war has brought an extraordinary growth in this area, some of which will be cut as war industries close, industrial nursing is now established as an important and permanent branch of nursing. It demands an organization whose policies are shaped by those who have blazed the trails in this area, and is enriched by the experiences of the new recruits.

Industrial nursing is an integral part of the growing movement to provide safety and health to our great worker population. This movement, instigated privately by industrial management, and officially by city, state and federal governments, is a substantial and growing phase in our country's efforts to prevent accident and disease and to promote health.

The AAIN represents nurses in every field of industrial and mercantile establishments. Its governing board is representative of the country as a whole. Its membership requirements are on a par with those of other standard making nursing bodies. It has already made material progress through the appointment of an executive secretary, in appointing counsellors in strategic areas for advising nurses, and in laying the ground-work for university and college courses in industrial nursing. Its expanding action program is centered on a sharing of common problems by all nurses in industry, and in aiding these nurses to broaden their usefullness to society.

The AAIN actively encourages membership in the nursing profession's official bodies, the district, state and national nurses associations. It also encourages the creation of sections on industrial nursing within these bodies, and it works in close harmony with these and all other agencies concerned with industrial and community health.

In this drive the American Association of Industrial Nurses appeals to industrial management, physicians and safety engineers, as well as to nurses, to bring word of this association to their nurses. A post card inquiry will at once furnish complete information to a prospective member. Address Mrs. Gladys Dundore, R.N., Executive Secretary, 54 W. 10th Street, New York City 11, N. Y.

A PNEUMATIC LEG SPLINT

A pneumatic leg splint, quickly and easily applied, which is recommended only as an emergency and transportation unit, is described in *The Journal of the American Medical Association* for August 5 by G. J. Curry, M.D., Flint, Mich.

"This piece of fracture equipment," he says, "is designed to employ the use of air properly encased between two layers of supporting material. It is an inflation unit for emergency care of fractured lower extremities. The two layers are cut to selected measurements and sealed at the edges. The air intake is through a valve located at either the upper or the lower portion. . . . . Hooks are attached to the anterior. . . . . edges and evenly spaced. The unit is folded around the affected part and laced with leather lacing material in the same fashion as a boot. Inflation follows, either by mouth blowing or by the use of a pump. . . . ."

He says it is consistently comfortable, pressure is low, constant and evenly distributed; can be used as a pressure dressing for complicating lower extremity burns; it floats, thus being useful as a splint for a sailor abandoning ship, and "it may be useful as an added piece of fracture equipment, aboard ambulances, emergency hospital services and in the surgical divisions of the armed forces."

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

COOK COUNTY

Vladimer G. Urse, superintendent of Cook County Psychopathic Hospital since 1941 has been granted a military leave of absence and has reported to Carlisle barracks with the rank of major. He expects to be sent later to the Lawson General Hospital at Atlanta, Georgia. Dr. John J. Madden, assistant psychiatrist for the last eight years, has been named as acting superintendent by the county board of supervisors.

The Chicago Tribune of August 27th reported that Dr. Andrew C. Ivy, head of the physiology department of Northwestern university medical school has discovered a method to reduce some ill effects of mapharsen, Vitamins C and P in combination with mapharsen are administered.

Graduation exercises for the class of 1944, Northwestern University Medical School, will be held in Thorne Hall, Thursday, September 14th at 4:00 P. M. The speaker will be Major General George Lull, Deputy Surgeon General of the U. S. Army. Due to the limited seating capacity, admission to commencement will be by invitation only. Immediately following the commencement exercises, the Medical Division of the Alumni Association will hold a reception in Thorne Hall for the members of the graduating class, faculty members, and their families. All Medical alumni are cordially invited. Members of the Women's Faculty Club will act as hostesses.

Col. Warren E. Pugh, a former member of the staff of the Illinois Masonic Hospital, Chicago, is home on leave. He was in command of the Atlantic base section in Morocco and participated in the Allied landing in France. He has been awarded the Legion of Merit for organizing the defense and discipline control of the troops in West Africa. He is also the holder of the Ouissam Alouite, the highest decoration which can be conferred by the Sultan of Morocco and presented for his cooperation with the French and Moslems while in command of the Atlantic base section.

Capt. Seymour L. Osher, formerly of Maywood, Ill., was recently awarded the Bronze Star for heroic action in Italy. The award was for remaining at his post and performing surgery despite the fall of flak throughout the hospital. Dr. Osher graduated from the University of Illinois College of Medicine, Chicago, in 1940 and entered the service Feb. 20, 1942.

A string of hospitals is being set up in Hollandia, New Guinea with many Chicago doctors in charge. Among these in that area are Capt. Clarence Kristiansen, Lt. Roland Landenson, Major James P. Grier, Major John Guerin, and Lt. Ray Gaines of Broughton, Illinois.

The Silver Star Medal was recently awarded to Comdr. Emmett L. Calhoun who graduated from Northwestern University Medical School in 1925. The citation accompanying the award read, "Comdr. Emmett L. Calhoun (MC) U.S.N.R., Hoquaim, Wash. Serving in the U.S.S. Northhampton in the Solomons 26-27, October 1942, he insisted on manning his station although weakened by a major emergency operation. He was seriously injured during an attack but next day, when 114 wounded survivors were brought aboard, he worked tirelessly for four days to relieve their suffering."

The Legion of Merit was awarded by the War Department to Col. Edward J. Kendricks, a regular army officer since Oct. 1, 1930, "for exceptionally meritorious conduct in the performance of outstanding service from September 1942 to October 1943." Dr. Kendricks graduated from Northwestern University Medical School, Chicago, in 1922.

CRAWFORD COUNTY

The regular meeting of the Crawford County Medical School was held at the Robinson Hospital August 10th. County Superintendent of Schools Roe M. Wright spoke on "Suggested Plans for Administrating the School Health Examination for the County."

DEWITT COUNTY

H. L. Meltzer of Clinton is home on his first furlough since before the start of the war. He was the first DeWitt County physician to enter the service and has been stationed at Pearl Harbor since shortly before the Japanese attack.

From the latest word received it appears that all DeWitt County doctors in the service are now stationed outside of the United States.

The physicians of Clinton have just concluded their annual immunization campaign which was carried on through the months of June and July.

Charles Bogardus of Clinton, a Hay Fever victim, has gone to Michigan to escape the discomfort of the pollen.

FULTON COUNTY

C. H. Hamilton, Vermont's only physician at the present time, is now in his fiftieth year of practice. In these fifty years, he has been away from work 15 days because of illness.

HARDIN COUNTY

Lt. Colonel Martha Jane Clement, a native of Illinois, has been appointed Chief of Army Nurses for the Sixth Service Command, replacing Lt. Colonel Pearl Fisher, retired. Colonel Clement was born in Elizabethtown and received her training at the Southern Illinois Hospital at Anna. She entered the Army Nurse Corps in 1918 and has served at Walter Reed Hospital, the Philippines and Langley Field, Virginia. In January 1942, she was sent to Australia as director of Army nurses in the Southwest Pacific with headquarters in Brisbane. She returned to the United States last May after 27 months of service in the Southwest Pacific.

LIVINGSTON COUNTY

Doctors of Fairbury entertained members of the Livingston County Medical Society and several doctors from McLean and adjoining counties at an afternoon and evening meeting July 20th. The doctors visited the local hospital during the afternoon, with the new maternity ward receiving their special attention. Dr. and Mrs. H. C. Sauer entertained the doctors at dinner in their backyard and then scientific papers were presented by Harry Oberhelman and Harold Voris of Chicago.

MORGAN COUNTY

George L. Drennan of Jacksonville was promoted to the rank of Commander as of October 1, 1942. He is Senior Medical Officer on an attack transport.

PEORIA COUNTY

Approximately 58 children attended the crippled children's clinic at St. Francis Hospital, Peoria on August 8th. The clinic is sponsored by the division of services for crippled children in Illinois cooperating with the Peoria Visiting Nurse Association, Peoria Rotary Club and the Peoria County Medical Society. Hugh Cooper was in charge of examination and diagnosis.

WILLIAMSON COUNTY

The Soldier's Medal was recently awarded to Capt. Martin M. May, formerly of Marion, Ill., who is now serving in the Army Medical Corps in Italy. The citation accompanying the award read "for heroism not involved in conflict with the enemy. On June 7, 1944 a fire of unknown origin started in the engineer combat battalion supply dump. The fire spread quickly through the inflammable materials in storage. Most of the men were trying to extinguish the conflagration when a tremendous explosion threw them to the ground, sending sheets of flame and smoke and bits of torn metal throughout the area. Twenty-four men and three officers were killed by the blast. As the smoke cleared away, Captain May saw Technician Fourth Grade Weibrich, severely burned, internally injured and suffering from shock, attempting to crawl out of the flaming area. With complete disregard for his own life Captain May left his place of safety and with the help of an enlisted man ran into the flaming inferno and carried Weibrich out. Although there were still small explosions, and knowing that the fire might engulf the wounded man, Captain May courageously and heriocally risked his own life in the face of known danger to rescue Technician Weibrich. Captain May then proceeded to organize his medical aid men and some volunteers to treat the casualties. He personally administered morphine and blood plasma to the most severely wounded. Unquestionably Captain May's prompt calculated actions saved the sight and the lives of several men. His heroic conduct is a credit to himself and to the Medical Corps." Dr. May graduated from St. Louis University School of Medicine in 1938 and entered the service Oct. 7, 1942.

WINNEBAGO COUNTY

The 50 year pin and plaque of the Illinois State Medical Society were awarded to F. A. Turner of Rockford in July. Dr. Turner in pointing out the changes 50 years have brought in the medical profession, reported that typhoid fever, which was taking a toll of 117.3 of every 100,000 a half century ago, now is rare, only "one case being reported to the city health department in 11 years." Dr. William J. Bryan, President of the Winnebago County Medical Society, presided at the special meeting.

MARRIAGES

FORREST R. MARTIN, Paris, Ill., to Mrs. Cauline McKinney Staley of Decatur, June 20.

DEATHS

BERTRAM M. BARRINGER, Emden; Illinois Medical College, Chicago, 1904. Had practiced medicine in Emden 37 years. Died July 26, 1944 at the age of 77 years.

FREDERIC ATWOOD BESLEY, Waukegan; Northwestern University Medical School, 1894. In 1900 he was named professor of surgery at the Post-graduate Medical School, Chicago, a position he held until 1908; for a year in 1901 he held a similar appointment at the Woman's Medical College of Northwestern University. In 1899 he joined the staff of Northwestern as clinical instructor in surgery and in 1915, he was made professor of surgery. During the first World War he served as chief surgeon of the Northwestern University Base Hospital Unit number 12. He was commissioned as major and retired with the rank of colonel. He was a founder member of the American College of Surgeons in 1913, serving as treasurer from 1926 to 1937, president and member of the board of regents from 1937 to 1938, when he became secretary, a position he held at the time of his death. In 1920 he established the Besley-Waukegan clinic in Waukegan. He died August 16, aged 76, following a prostatectomy.

MERRICK ROBLEE BRECK, Chicago; Rush Medical College, 1924; on attending staff of Ravenswood Hospital; formerly on the staff of the Atchison, Topeka and Sante Fe Railroad Hospital, La Junta, Colorado. Was commissioned a first lieutenant in the medical reserve corps of the U. S. Army on Dec. 3, 1931; promoted to captain, major and lieutenant colonel; drowned in New Guinea June 9, aged 44 years.

CHARLES O. BURGESS, Monmouth; University of Illinois College of Medicine, 1903. Had practiced medicine in Monmouth for 37 years. He was a member of Monmouth Medical Club, Warren County and Illinois State Medical Societies, Fellow of the A.M.A. and for many years a member of the House of Delegates of the Ilinois State Medical Society. Died of a malignancy following a long illness, August 24, 1944 at the age of 68.

WILLIAM A. FISHER, Chicago; University of Michigan Medical School, 1885. Formerly professor of ophthalmology at Chicago Eye, Ear, Nose and Throat College. He founded the hospital in 1897 and was head of it until about 10 years ago. He had practiced in the loop in Chicago for more than 50 years. Died July, 1944 at the age of 89.

ARTHUR J. FLETCHER, Danville; Northwestern University Medical School, 1909. He began practicing medicine in Homer before he entered service in World War 1 as a lieutenant. He advanced to the rank of major and when discharged moved his office to Danville where he had practiced for many years. At the time of his death he was president of the Vermilion County Medical Society. Died of a heart attack July 31, 1944 at the age of 65.

WILLIAM H. GERMAN, Chicago; Michigan College of Medicine, 1883. Had practiced medicine on Chicago's south side for 60 years. Was formerly a surgeon for the Chicago, Rock Island & Pacific Railroad. Died in July, 1944 at the age of 89.

OTTO WILLIAM HINN, Cicero; Bennett College of Eclectic Medicine and Surgery, 1912. Before coming to Cicero he had practiced in Chicago but had moved to Cicero many years ago. Died suddenly of a heart attack July 20, 1944 at the age of 59.

FRANK JAMES KOLUMBAR, Jr., Berwyn; Chicago Medical School, 1942. Was commissioned a first lieutenant in the medical corps, U.S.A., on Oct. 12, 1942; killed in action in the Marshall Islands February 21, aged 29.

CHARLES LIEBER, Waukegan; University of Nebraska College of Medicine, 1908. Served for 15 years as Lake county physician and superintendent of the Lake County General Hospital. He was a senior lieutenant in the navy medical corps in World War 1. Upon his discharge in 1919, he began practice in Waukegan where he was on the staff of St. Therese Hospital. Died at his ranch home near Gurley, Nebraska, August 16, 1944 aged 57.

FRANKLIN JACOB LINS, Durand; Rush Medical College, 1897. Had practiced medicine and surgery in Durand for 39 years. Died August 1, 1944 at the age of 80.

OLIVER LEE OGLE, retired, Belleville; St. Louis Medical College, Missouri, 1897. Pioneer resident of St. Clair County. Died July 31, 1944 at the age of 76.

JAMES WIGHT PACKARD, Rockton; College of Physicians and Surgeons, Chicago, School of Medicine of the University of Illinois, 1910. Formerly on the staff of Wesley Memorial Hospital, Chicago. Died May 24, 1944, aged 80.

JOSEPH LESLIE SHERRICK, Monmouth; Johns Hopkins University School of Medicine, 1914. Practicing physician and surgeon in Monmouth for nearly 30 years. His death was attributed to influenza, caused by overwork, followed by complications effecting the lungs and heart. Died July 28, 1944, aged 56 years.

ANDREW W. SPRINGS, Dewmaine; National Medical University, Chicago, 1905. Had practiced medicine for 35 years, most of that time as head of the Madison Coal Company's Hospital at Dewmaine. He was awarded a gold medal for life saving at the time of a mine explosion at Royalton in 1914. He was the only doctor to go underground to administer first aid. Died July 22, 1944 at the age of 75.

GEORGE S. TROTTER, Olney; Kentucky School of Medicine, 1898. Had practiced in Indiana & Dundas several years before coming to Olney in 1916. Died after an illness of several months on July 23, 1944 at the age of 75 years.

CARL F. WEINBERGER, Chicago; Rush Medical College, 1907. Was staff surgeon at Evangelical Hospital. Died August 16, 1944, aged 70 years.

WILBUR STUART WOOD, Decatur; University of Illinois College of Medicine, 1925. Was attending medical school at the time of World War 1 when he became a member of the 149th Field Artillery and was wounded twice in action in France. After the war he re-entered medical school and served his interneship at St. Luke's Hospital, Chicago. Doctor Wood's work in the treatment of children in the Crippled Children's clinic at Decatur and Macon County Hospital and in the Gunhild Johnson Memorial room for crippled children was judged the outstanding service to the community during the year. In September, 1937, he was named president of the Macon County Tuberculosis and Visiting Nurses' Association and was retained in 1938. Was stricken with a heart attack while on a vacation in Wisconsin on August 7, 1944 at the age of 44.

COUNCIL ON PHYSICAL THERAPY BECOMES COUNCIL ON PHYSICAL MEDICINE

The Council on Physical Therapy of the American Medical Association has become the Council on Physical Medicine, *The Journal* of the Association announces in its July 29 issue. This is in accordance with an action by the Association's House of Delegates at the recent annual session in Chicago. Discussing the change, *The Journal* says:

"The designation 'physical medicine' is a more inclusive term. Physical agents are used not only for therapy but also for diagnosis. Hospital departments of physical medicine, when they employ electric tests for reaction of degeneration or perform such tests as the cold pressor test, are employing physical agents not for therapy but for diagnosis.

"The Council has for some time interested itself in certain phases of occupational therapy, which is a branch of the broad field of physical medicine. The Council was informed that the American Occupational Therapy Association was anxious to have the Council give more attention to occupational therapy. Discussions between representatives of the Council and the American Occupational Therapy Association indicated that the association would welcome the inclusion of occupational therapy under a Council on Physical Medicine.

"Under the following definition for physical medicine, the entire field can be covered by a Council on Physical Medicine: Physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise and mechanical devices for physical and occupational therapy in the diagnosis and treatment of disease. The Council believed that it would be wise to appoint a special subcommittee of five physicians interested in occupational therapy who could help to bring this phase of therapy more fully under direct medical supervision.

"Finally there is definite precedent for the use of the term 'physical medicine,' which has long been considered the most acceptable term by our British colleagues. The Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons has just instituted a diploma in physical medicine.

"With its new name the Council on Physical Medicine will continue to function as it has always functioned but will devote additional attention to problems of occupational therapy."

Saturday Morning Clinic in a County Health Department . . . . Gray hair neatly parted, an ingratiating smile on her face, flowered cotton print to her ankles, old at not quite sixty, the next visitor explains to a nurse in a thin toothless treble that she's worried about her chest. She feels a tightness there, and she has just lots of colds. Yes, she does spit up sometimes. Yes, her father died of tuberculosis when she was seventeen. Well, she really ain't never had a doctor. Epidemiologically, this hardy spinster offers no very severe threat to the health of her neighbors, but she is troubled, and she may after all these years have a developing lesion, and so the health officer gives her a tuberculin test and the nurse tells her how to collect sputum for examination in the laboratory and she goes off with a blank which, when signed by some doctor whom she knows, will entitle her to a free X-ray. Annual Report, The Commonwealth Fund, 1941.

Diabetic patients showed evidence of active pulmonary tuberculosis in 4% of all cases examined in local chest X-ray surveys. E. L. Leech, M.D., Health News, April 27, 1942.

Tuberculosis is an old dangerous enemy. It lies in wait particularly for the young adult, whose services today and after the war must be of supreme value to the nation. Tuberculosis always increases in war-time, and measures must be taken now if the increase that we may expect in the near future is to be stemmed. Existing tuberculosis services deal with those who have symptoms of disease, or who feel ill. A new advance is now needed. This means finding cases in whom the disease has started, but not yet caused the patient to feel ill. Often nothing may be necessary other than careful watching; in some, short treatment is required, but in all cases there is a better hope of eradicating the disease. From Bul. of Nat'l Assn. Prev. of Tuber., Eng., Jan. 11, 1942.

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.

Peoria, Ill.

BATHING BEAUTIES

Recently I visited some public bathing beaches
That I might inspect the beautiful peaches,
That we are told,
Infest such places in types and varieties
manifold.

There were immense crowds of humans whose
topographical anatomy was on exhibition,
And it required but little erudition
And a meagre aesthetic sense,
To conclude that ninety nine per cent of all
bathers should do their stuff in
solitude behind a high board fence.

The age range was from little toddlers
To ancient waddlers.
The perpendicular limits were from squatty
abbreviated runts,
To elongated, gangling, ungainly, misshapen
specimens doing awkward stunts.

Horizontally one saw everything from
emaciated monstrosity
To the gelatinous undulations of advanced
adioposity,
Said adiposity, starting with a series of
sagging chins,
Extends downward and outward an indeterminate
distance to where the alleged waist
line begins,
Then abruptly recedes until it contacts a
pair of flabby thighs
Which surmount two shapeless calves of scanty
size.

Legs I saw of every type, color, length, size
and shape:
An occasional one might perhaps be awarded a
blue ribbon but on the vast majority I
would be inclined to hang a bunch of
crepe.
If horsemen are justified in the importance
they attach to trim and shapely legs in
distinguishing thoroughbreds from scrubs,
Then a large proportion of the pedal extremities
I observed must have been fastened on a
sour bunch of dubs.

Some were as shapely as an elongated worm,
While many resembled the underpinning of a
ponderous pachyderm.
Bowed legs, knock knees and flat feet
Made that part of the picture complete.

I inspected backs without number,
All visible down to the fifth lumbar.
There were humpbacks, lateral curvatures and
compensatory lordosis,
To say nothing of gluteal ptosis.
But, by and large, I would recommend, if you
are going to observe bathers as I tried
to do
That you limit yourself to a rear view.
If you look only at backs
You are less likely to have nausea attacks.
A front view is a sight
That is pretty sure to destroy one's appetite.
And a lateral silhouette
Is worse yet.

As a matter of fact about the only place from
which to view public beach bathers and
not receive a series of aesthetic shocks,
Is from a distance of about six blocks.

Is it true, then, that only ugly and misshapen
human forms abound?
Are there no truly beautiful ones to be found?
Well, perhaps a few,
But they are hopelessly lost in the
preponderance of an otherwise motley crew.

Of course it is all right to visit bathing
beaches if your sense of humor is
sufficiently keen,
For a fat human in a bathing suit is about the
funniest thing you ever have seen.
But if you take the thing seriously and your
quest of beauty
Is a sort of artistic obsession or aesthetic
duty,
Then stay away from the beaches and be
satisfied with such beauty as you can
discover
On a billboard or a magazine cover.

Tuberculosis in the Army. Medical tests of Canadian army recruits are being sharpened to the point where today only about one out of 1,000 men develop tubeculosis after being accepted in the army. Since May, 1941, a total of 895 men have been discharged from the army because of pulmonary tuberculosis, but of that number 251 had served for several months before being X-rayed. Major G. T. Zumstein, Royal Canadian Army Med. Corps., Bulletin Canadian Tuber. Assn., March 1942.